

# F.A.S. NEWSLETTER

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## FALL-OUT: FACTS AND FIGURES

### AEC REVEALS FALL-OUT DATA

With an impact almost as startling as the explosion of an H-bomb itself, the US, and the rest of the world too, learned for the first time of the extent of damage that can be caused by radioactive "fall-out." The first revelations came in an article by Ralph E. Lapp in the Feb. Bulletin of the Atomic Scientists, based on available unclassified information. On the heels of this article, Adm. Strauss released on Feb. 15 detailed information and estimates from AEC data on last year's Bikini tests.

7000 SQ. MI. In his statement, Strauss said "the Commission believes the American people wish to be informed regarding the dangers of nuclear explosions and the measures which individuals can take to protect themselves." On the basis of data from the Bikini test of Mar. 1, 1954, it was estimated that "there was sufficient radioactivity in a down-wind belt about 140 miles in length and of varying width up to 20 miles to have seriously threatened the lives of nearly all persons in the area who took no protective measures. ... about 7000 square miles of territory down-wind from the point of burst was so contaminated that survival might have depended upon prompt evacuation of the area or upon taking shelter and other protective measures."

28 BOMBS ENOUGH Writing in the Bulletin about a week earlier, Lapp, without access to AEC data, gave his picture of the dangers to be encountered by those outside of the immediate bomb blast area, but within an elliptical area of about 10,000 square miles down-wind from the blast. He estimated that a "small-scale" attack, using only 28 bombs, could cover the industrial heart of America producing an uninhabitable "atomized" area normally occupied by 50 million Americans. While survival in this area might be possible with appropriate radiation protective measures, normal industrial production would be impossible to maintain.

RADIATION HAZARDS Both Lapp and Strauss discussed "fall-out" and its dangers in detail. Following the explosion of a nuclear weapon, large amounts of surface material are sucked up in the mushroom cloud. The radioactive particles are carried down-wind and gradually fall back to the earth, more massive and more radioactive particles falling out sooner than lighter ones. Speaking of protective measures, Strauss said the "greatest radiological hazard is that of exposure to external radiation. ... Exposure can be reduced by taking shelter" preferably in a basement and behind brick walls. Decontamination procedures, such as bathing and changing clothing, will reduce danger from contact with the skin. Shelter was also considered to be the major protective measure against both burn and blast effects well outside of the target area. The AEC saw no danger from ingestion of the constituents of fall-out, nor from genetic effects of radiation.

PRESS REACTION Immediate reaction to Strauss' statement was that this was grim news but that it was good to have the facts out in the open, that it was good to have official, informed statements rather than conjecture, semi-official guesses, and some misinformation. White House press secretary Hagerty said Eisenhower was prompted to approve the revelation of the deadly effects of H-bomb radiation in order to re-

### U.S. AND U.S.S.R. AGREE ON NO H-TEST BAN

At his Feb. 23 press conference, President Eisenhower said that he and his advisers see nothing to be gained by an international agreement to ban further tests of thermonuclear weapons. Soviet Premier Bulganin, in a special interview with William Randolph Hearst, Jr., similarly showed little enthusiasm when asked about the desirability of an H-test ban.

H-ANNIVERSARY The presidential statement came just a few days short of a year after the first full-scale thermonuclear explosion showered radioactive ash over thousands of square miles of the Pacific ocean. The world has done a long, slow double-take as the events of that fateful March 1, 1954 have gradually emerged from behind the tight curtain of secrecy. The magnitude of the explosion was first suggested by the tragedy of the Japanese fishing boat, Lucky Dragon, then sketched by various official and unofficial statements, and finally -- almost a year after the event -- confirmed by the AEC (see next column). Over the past year, alarm has steadily grown and, with it, demand from many quarters that, if not the H-bomb itself, then at least the testing of it must be controlled.

MORATORIUM PROPOSED On Feb. 11, the Washington Post editorially called for a "Moratorium on H-bomb Tests." Essentially what is proposed is "a self-enforcing ban on further hydrogen weapons tests to be carried out through the establishment of an international long-range monitoring system." The Post noted that proposals of similar nature have come, among others, from David R. Inglis (Nov. 1954 Bulletin of the Atomic Scientists), informally from French Premier Mendes-France, and recently from the prime ministers of the Colombo nations of Southeast Asia. The newspaper said that consideration has been given to the proposal by the Administration and by the Joint Congressional Committee on Atomic Energy, but for various reasons it has not been adopted.

The editorial analyzes the moratorium notion very  
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emphasize the need for world peace and disarmament and to make apparent the reasons for his "atoms-for-peace" program, and also to show Americans how, "with adequate protection, they could safeguard themselves and their families."

In general, editorial opinion was that the disclosures should, and would, stimulate civil defense activity. Addressing the question of apathy towards H-bomb dangers, the Washington Post (Feb. 17) stated "people have not been presented with a convincing alternative to the paralyzing prospect of being roasted or gamma-rayed to ashes if hydrogen war should start." But, the Post continued, "apathy and futility are luxuries the country cannot afford. ... An adequate [civil defense] program ... can only be obtained if men of stature will attach serious importance to the program."

However, there was general agreement that the major conclusion to be drawn from the disclosures is that, if we want to maintain the world as we know it, nuclear weapons must be banned. In the words of the N.Y. Times (Feb. 17), "the reassuring words of the AEC do not reassure. They mean only that some lives can be saved. They do not mean that civilization could be saved."

## WEAPONS CONTROL SOUGHT

In the face of continuing apprehension about the threat to civilization imposed by nuclear weapons, the world's governments continue their so far largely unrewarding search for means to ensure that such weapons will not be unleashed on the world. Substantial attention is also being given to the problem of trying to prevent mankind from being seriously damaged by the wayside danger of nuclear bomb test hazards while we journey along the difficult road toward a solution of the main problem.

**WORLD DIPLOMACY** President Eisenhower underscored the sincerity of US peace aims when he voiced his deep conviction that the avoidance of nuclear warfare must be a predominant aim of mankind. In his press conference Feb. 9, he called the threat of nuclear warfare "so serious that intelligent people ought to forego a great many lesser ambitions in the effort to achieve an understanding. . ." Recent Russian tactics have ranged from Molotov's vitriolic denunciation of the US on Feb. 8, after Bulganin replaced Malenkov as Soviet Premier, to the revival in Moscow on Feb. 18 of the earlier Soviet proposal that all nations destroy all their nuclear weapons.

The first meeting of the British Commonwealth Prime Ministers since 1953, which ended Feb. 8, was dominated by concern about nuclear warfare, and in their concluding communique the ministers expressed "hope that when the peoples of the world understand the magnitude of the disaster which world war would bring, all nations will shrink from violence and follow peaceful means of settling their differences." In the Feb. 2 Christian Science Monitor, Peter Lyne reports from London that great interest has been aroused in Britain by a new stand taken by former Labor Prime Minister Attlee. Attlee, who in 1950 launched Britain's largest peacetime rearmament program, is now convinced that the only reliable solution to the problem of nuclear weapons lies in total world disarmament.

On the other hand, in an address before the Commonwealth Prime Ministers' meeting on Feb. 2, Prime Minister Churchill suggested that equality in A-power between Russia and the West might be an effective way to bring about a lasting "understanding" between the two blocs. About 2 weeks after Churchill's statement, the British government announced that it had solved the "research" problems of building thermonuclear weapons and would now proceed with the 2 remaining steps: development and production. According to the N. Y. Times (Feb. 18), the British government said it considers it its duty to proceed with these steps as the main deterrent to war.

**LONDON CONFERENCE** Another try, and this time a behind-closed-doors try, at achieving some agreement on a workable mechanism for disarmament got under way in London Feb. 25. A 5-nation subcommittee of the UN Disarmament Commission, consisting of the US, Canada, Great Britain, France and Russia, convened for secret talks without announced agenda and without time limit. US representative Lodge saw greater chances for concrete progress "behind closed doors, where the temptation to make propaganda is reduced to a minimum." Although both East and West repeatedly declare for it in principle, there still appears to be a large gap between what is meant by disarmament on the two sides of the Iron Curtain. Lodge has called for a plan that will "cover all the big countries and all kinds of arms -- including both nuclear weapons and other weapons. . . The plan must also include a fool-proof system of inspection and control by which each side cuts down its weapons and armed forces step by step. . ."

The Soviet Union is expected, according to the N. Y. Times of Feb. 22, to continue to reject the idea of balance of overall military power and to insist merely on a freezing of armaments at the Jan. 1, 1955 level. This would effectively prevent German rearmament.

**NEW TESTS** Meanwhile, both the US and Russia continue to test nuclear explosives. In the US, the first of a series of 8 to 12 tests was scheduled in the Nevada Proving Ground for Feb. 15. In conducting these tests, the AEC has been most careful to insure and reassure that there would be no secondary radiation damage to the population. The N. Y. Times of Jan. 22 reported that a 7-man team of AEC experts, led by A. C. Graves,

## THE MILITARY AND THE NUCLEUS

The effects of nuclear weapons developments on military planning continue to attract much attention. On Feb. 10, Army Asst. Chief of Staff for Operations Maj. Gen. Gavin announced plans for substantial reorganization of the structure of army units to adapt to A-warfare. The following week, Bureau of Navy Ordnance Chief Rear Adm. Withington, speaking before a group of Defense Dept. officials, predicted a vast change in warfare in the next decade which will cause a very radical change in naval strategy (Washington Post, Feb. 16).

**POINT OF NO RETURN** In an article entitled "Our Point of No Return," in The Reporter of Feb. 24, retired Brig. Gen. Phillips explored possible deleterious effects on world diplomacy from the shift of military plans to preponderant dependence on nuclear weapons. Phillips' thesis is that statesmen must find means to prevent warfare or the use of nuclear weapons before the world's armies become completely dependent on such weapons. Once conventional weapons have been replaced in large part or allowed to atrophy, any military conflict will necessarily develop into a catastrophic full-scale war. A similar concern was expressed by President Eisenhower at a press conference Jan. 12 when he warned that any military conflict might grow into an atomic war, since when force is resorted to, it is not always possible to limit the use of weapons. Possible effects on diplomacy were also discussed by Bernard Baruch in an interview reported by the N. Y. Times Jan. 9. Baruch said, "as time goes on, and more is known, many nations, even small nations, will make a bomb. . . when the bomb is in the possession of little nations, it will make them the equals of the larger nations. . . if all nations have a bomb, it will be more difficult to make an agreement."

Changes of military defense plans in the face of the H-bomb are also proposed. In a recent issue of US News and World Report, Air Force Reserve Col. Leghorn suggests a dispersion of defense forces both in structure and in location. Because of the unevaluated problems raised by the cobalt bomb, which cannot even be tested without risking world-wide damage, all military planning must be incomplete (see Christian Science Monitor, Feb. 18; Denver Post, Jan. 5). The first use of the bomb would almost necessarily be a war use.

## SCIENTIFIC MANPOWER

In approving the Administration's bill extending the Selective Service act, the House Armed Services Committee struck out an amendment by Rep. Carl Hinshaw (R, Cal.) which would have created a Scientific Manpower Board empowered to send qualified scientific personnel back into research work after only three months of basic military training.

The Committee heard testimony from Howard Meyerhoff of the Scientific Manpower Commission, and Ralph Chaney of the Univ. of California, that the drafting of young scientists was adversely affecting progress in research programs vital to the nation's security. Meyerhoff reported that development work on Navy guided missiles was delayed several months by the drafting of a young scientist from the Johns Hopkins Applied Physics Laboratory, and Chaney told that a scientist responsible for the safety of 1600 people working at the U. of California's Livermore laboratory is facing induction. The Armed Services Committee chairman, Carl Vinson (D, Ga.), said the problem of draft status of qualified scientific personnel would be given early and full consideration as separate legislation.

scientific advisor for the tests, visited nearby towns reassuring the people. AEC Chairman Strauss and Civil Defense Administrator Peterson announced on Feb. 9 that state officials, civilian defense observers, industrial representatives, and newsmen will be invited to witness a later test in the series, probably in April. With extreme caution, the early tests were repeatedly postponed, the first 2 finally being set off on Feb. 18 and 22 respectively. These were thought to be relatively small devices, probably of tactical design. Four new nuclear weapons tests by Russia between Sept. and Nov., 1954, were reported by a spokesman for H. Longchambon, France's Secretary of State for Scientific Research, in a Feb. 5 interview with the Paris paper France-Soir.

## SECURITY REAPPRAISAL

The controversy over the security program continues actively. Concern is being expressed from many quarters (see Newsletter 55-1) that as presently operated the Federal security program is overly rigid and burdensome to the point of being unrewarding. Recent developments indicate that the Administration is reacting to the many criticisms leveled against the program, but there have been no fundamental changes and no official policy statements so far.

**RESEARCH GRANT POLICY** Of most interest to scientists is the move by the Administration to re-examine its policy with respect to loyalty criteria in the awarding of grants for non-secret research. Acting for the President,

White House Assistant Sherman Adams has asked for the advice of the National Academy of Sciences in formulating a sounder policy in this area. In a letter to Detlev W. Bronk, Academy president, Adams expressed the Administration's concern that "misunderstanding between scientists and the Government... might impair the cordial relationships which are so essential to the national welfare" and "could lead to a loss of valuable benefits from research." The Academy has agreed to appoint a committee of scientists and others to consult with the Government on these matters. (The exchange of letters between Adams and Bronk was released by the Academy Feb. 8; copies are available on request from the FAS Washington Office.)

**BACKGROUND** The letter requesting the Academy's assistance is apparently the culmination of many months of conferences on the subject. The existence of the problem was first brought to light last spring, although scientists had been aware since 1952 that loyalty criteria were being applied to grant applicants. In April 1954, the Amer. Society of Biological Chemists passed a resolution condemning the "imposition of political or other extraneous requirements on the investigator, as a condition for awarding a research grant" when the research was open and unclassified. The resolution requested the National Academy to investigate reports that loyalty criteria were being used in the awarding of research grants and "take strong and appropriate action to maintain the freedom of fundamental scientific investigation in the US." The Council of FAS voiced its support of the biochemists' resolution at its Washington meeting May 1, 1954, and the Amer. Society of Plant Physiologists endorsed a similar resolution in September. In response to a letter of inquiry from the Academy, Secretary of the Dept. of Health, Education & Welfare Oveta Culp Hobby stated that her Department did not "require security or loyalty investigations in connection with the award of research grants." She went on, however, to state that "When... information of a substantial nature is brought to our attention, it becomes our duty to give it more serious attention." No further clarification of procedures or criteria was offered at that time.

Roland Sawyer, in the Christian Science Monitor of Feb. 8, suggested that the present appeal to the Academy for advice may presage a shift of attitude on the part of the Executive Branch toward the entire Federal loyalty and security program. Some of the optimism of this opinion must be tempered by the fact that the White House thus far has shown little inclination to appoint a special Presidential commission to examine the Federal personnel security program.

**CONGRESSIONAL REVIEW** Such a top-level commission has been proposed by Senators Humphrey (D, Minn.) and Stennis (D, Miss.) in Senate Joint Resolution 21, and by Rep. Frelinghuysen (R, N.J.) in a bill, H.R. 2590. Hearings will begin Mar. 3 on the Humphrey resolution, which would establish a bi-partisan commission to study the government's over-all security system. In a statement released Feb. 21, Humphrey stated, "In my own study of the security mechanism to date, I have become convinced that we... have permitted the security problem to mushroom at random, and without rational planning, coordination and control. I am convinced that there are numerous loopholes, anomalies, and anachronisms in our present security structure..."

At its meeting Jan. 29 in New York, the FAS Council lent its support to the Humphrey-Stennis and Frelinghuysen pro-

## PASSPORT CHIEF TO RETIRE

After 47 years in government service, Mrs. Ruth B. Shipley has revealed her plans to retire April 30 as head of the Department of State's Passport Division, her post since 1928. The policies of her division have come to public notice a number of times in the post-war period. The most notable cases involving scientists were those of Linus Pauling, whose passport for scientific missions was several times delayed or denied, and Martin Kamen, who had to sue in court for a decision and, when turned down, in effect forced first use of a dormant appeals machinery.

Mrs. Shipley's successor has not been announced. A rumor has been denied that it will be Miss Frances Knight, a protégé of Scott McLeod, State's security program head. The Washington Star quotes Mrs. Shipley: "Yes, my successor has been chosen -- by me! I hope to win. Don't you think that after 28 years I should know what's needed?"

## KAMEN WINS LIBEL SUIT

On Feb. 17 Martin Kamen, Washington U. chemist, was awarded \$7500 damages by a D.C. jury, who agreed he had been libeled in 1951 by the Washington Times-Herald. The paper published a picture and two articles identifying him as the anonymous person described by Sen. Hickenlooper (R, Io.) in a Senate speech on June 30, 1951, as a "spy," a "traitor," and a "seller of secrets." A companion suit against the Chicago Tribune, which had printed the same material, was dismissed on a technicality; Kamen plans to appeal this ruling. Attorneys for Kamen were Alexander Boskoff and Nathan H. David, both of Washington.

posals. In a statement reviewing the Condon case as an example of the mismanagement of the security system, FAS asked for a "full and authoritative public review of the procedures followed... Such a review should aid in the creation of a personnel security system which is less subject to abuse for partisan political ends than the present system, and which may contribute more effectively to the true security of the nation."

**FUND FOR THE REPUBLIC** Another review of the security system is underway outside the government. The Bar Association of New York City, supported by the Fund for the Republic of the Ford Foundation, is launching a study of the security-loyalty program by a committee of distinguished and disinterested private citizens. Commenting on the role of the Fund in this and other projects, Robert M. Hutchins, president of the Fund, told the Nat. Press Club on Jan. 26 that "The Fund for the Republic is a kind of anti-absurdity fund, a fund for the law of contradiction, a fund to remind us that we can't have things both ways. We can't brag about the Bill of Rights and talk about 5th Amendment Communists. We can't say that every man has a right to face his accusers and go on using what the Denver Post has called "faceless informers." We can't proclaim our devotion to due process of law and then deny it to people we don't like."

**PROCEDURES RE-EXAMINED** While no details have been announced as yet, it is encouraging to note that at President Eisenhower's request the internal security division of the Justice Dept. is preparing recommendations for changes in the existing security program. Assistant Attorney General Tompkins states (Wash. Post, Feb. 16), "a staff under my direction has made a careful analysis of the program and we are about to make certain proposals aimed to improve its administration, each of which further protects the rights of the individual and is designed to avoid any hardship to individual employees."

The Industrial Security Program of the Defense Dept. is also slated for an overhauling, but with no basic changes in the approach. Defense Dept. general counsel W. M. Brucker said on Feb. 16 that "more than a desirable number" of suspensions have taken place and that "charges were not always prepared as carefully, as adequately, and as fully as they should be." He indicated that some cases have dragged on for 6 months to a year, working an injustice on the employee and bogging down work schedules. Security officials, he said, have tended to take too "inflexible" a position in interpreting security regulations.

## NUCLEAR POWER

While Dixon-Yates, test shots, and H-bomb hazards get the headlines, a number of significant items of interest to the development of the nuclear-fueled power industry have cropped up. These include the beginnings of an international competition for leadership in the nuclear power field; the burgeoning of American interest in sponsoring nuclear power abroad; and the first real solicitation of private capital in the US for investment in nuclear development.

### NUCLEAR DEVELOPMENTS ABROAD

As to development of nuclear power in other countries, it is generally conceded that the efforts of Great Britain and Canada are major, and that these countries are potential competitors of ours. The British government has just announced a 10-year plan for 12 reactors to produce 2000 megawatts of industrial power, with the first plants to be completed in 1957; (these plants will probably also be weapons material producers). The Canadians have announced an experimental power producer of advanced design for 1958.

Meanwhile, France and Sweden have research reactors going, and Norway, Belgium, the Netherlands, Switzerland, India and Australia are planning power reactors. A swarm of other countries now have atomic energy commissions whose activities range from mere existence to organizing nuclear power study groups, and include sponsorship of research in physical sciences, radiation effects, life sciences, and systematic raw material searches. Most of the countries working on nuclear power have followed the US lead of actively associating private capital with the development effort.

In recognition of these efforts, and as part of the atomic pool plan, the AEC (in its 17th Semi-Annual Report) announced six steps which are less dramatic, but potentially as useful as the offer of U-235 allocation: (1) Establishment of a reactor training school at Argonne National Lab. to be opened in March, 1955; (2) a special session for foreign nations of the 4-week course in radioisotope techniques at the Oak Ridge Institute of Nuclear Studies to begin May 2; (3) training courses in the utilization of atomic energy in the fields of biology, medicine, and agriculture; (4) training courses in industrial medicine and hygiene; (5) invitations to a number of doctors and surgeons and specialists to spend about 2 months in the US visiting the Argonne and Oak Ridge Cancer Hospitals and other research centers; and (6) presentation of a number of AEC technical libraries to countries or regional groups."

A further indication of increased US cooperativeness is embodied in the recent AEC announcement on Feb. 12 of sale of 10 tons of heavy water to India for use in a research reactor, and in the sponsorship by Rep. Sidney Yates (D, Mo.) of a resolution providing for construction of a reactor in Japan (see next column). It now appears possible that, with the help of the US and Britain, the countries of Western Europe may, collectively, reach an advanced position relative to Russia in nuclear power.

DOMESTIC NUCLEAR POWER With continued support from federal funds, steady progress has been shown in the 5-year, 5-reactor program, which includes: Sodium Graphite Reactor, at Santa Susana, Calif., 1955; Experimental Boiling Water Reactor, at Argonne Nat. Lab., 1956; Pressurized Water Reactor, at Shippingport, Pa., 1957; Fast Breeder Reactor, 1958; Homogeneous Thorium Reactor, 1959. Privately owned research reactors are scheduled for Penn. State, UCLA, Michigan, Illinois Inst. Tech., MIT, and No. Carolina State (in operation for several years); and by Amer. Machine and Foundry and Batelle Memorial Institute. The investment of private capital in industrial nuclear power study groups is increasing. It is possible that more than \$20,000,000 of industrial funds will be invested in this field in the coming year. Atomic Power Development Associates (APDA), a group of 25 electric power companies and manufacturers, is expected to take the lead along with the major equipment manufacturers -- G.E., Westinghouse, Babcock & Wilcox, Allis-Chalmers, Vitro, and others.

Under the AEC's recently announced "demonstration reactor" program, the AEC would partially subsidize private development of new reactor systems for power beyond the usual scope of federal subsidies (as, for example, the provision of re-

## GENEVA A-POOL CONFERENCE

Procedural details covering the International Conference on the Peaceful Uses of Atomic Energy, to be held in Geneva in August, have been established by actions of the UN Secretary General and the UN 7-Nation Advisory Committee. Secretary General Hammarskjold appointed Dr. H. J. Bhabha of India to the post of conference president, with powers to keep the papers and discussions confined to strictly scientific treatment.

Prof. W. J. Whitman of M.I.T. was appointed as the conference secretary-general, and he will play a key role in insuring that the meetings fulfill their great promise. Eighty-four countries have been invited to participate, each to be represented by 5 scientific delegates. These include the 60 UN member nations and 24 others which are members of various affiliated agencies. Communist China has not been invited, although 10 of the Soviet-bloc states have been. All of the scientific papers are to be reviewed by a panel under Dr. G. Randers of Norway and finally approved by Hammarskjold before they can be presented. An agenda for the conference has been adopted which covers almost every aspect of research and development in the field of atomic energy.

U.S. PLANS Primary responsibility for the technical planning for US participation in the Geneva conference has been given to the AEC. On Feb. 23, the AEC announced that George L. Weil, consultant to the Commission, has been appointed as director for the planning operation. Invitations are being issued for submission of abstracts of papers for consideration as part of the US program. In an open letter to the President released by the Federation February 26, FAS chairman M. Stanley Livingston endorsed "the clear and positive program presented to the UN to implement" the A-pool plan. The letter stressed that "considerably more technical information will need to be declassified before the scientists of other countries can fully participate in power reactor design." The problem of releasing classified information will have to be met not only in connection with the Geneva Conference but also in connection with the AEC's recently announced training program in peacetime use of nuclear power (see column 1).

REACTOR FOR HIROSHIMA. A resolution calling on the US government to provide for the construction in Hiroshima of a nuclear reactor "dedicated to the advancement of peace and progress," was introduced by Rep. Sidney Yates (D, Ill.) in the House on Jan. 27. The idea of building a reactor devoted to peaceful application of nuclear power at the scene of the first atomic holocaust of World War II was first advanced by Atomic Energy Commissioner Murray in a speech last Sept. 21. Advocates of the Hiroshima reactor point out that in addition to extending the energy resources of power-short Japan, this reactor, devoted to the peaceful uses of atomic energy, would prove to the world that US interests in the atomic field are not confined to weapons alone.

search facilities in the national laboratories). One point of contention was hinted (N. Y. Times, Feb. 8) by Walker Cisler, president of Detroit Edison and chairman of the management committee of APDA. His group complained about the low cost the AEC will pay for fissionable material manufactured in a reactor, which represents a potential major source of income to a private development; what was omitted was the apparent willingness of AEC to furnish material to reactors at comparably low prices. Nevertheless, APDA and Consolidated Edison of N. Y. are both likely to submit bids to the AEC under the demonstration program, and other firms may also do so. (The Nova Scotia Light and Power Co. is apparently studying a similar Canadian proposition.)

The whole industrial participation program, and especially two aspects -- the demonstration reactor program and the letting of atomic energy research and development contracts (wholly financed by the government) to industrial contractors -- is due for an airing in the current Joint Atomic Energy Committee hearings. These hearings ran from Jan. 31 to Feb. 10, and will be resumed Feb. 28 through Mar. 3. Two of 3 parts of the transcripts of these hearings are now available (55¢ each, Govt. Printing Office, Washington 25, D.C.)

**OPPENHEIMER BARRED FROM CAMPUS**

On February 14 it was revealed that University of Washington President Henry Schmitz had vetoed an invitation to lecture offered by the Physics Department to J. Robert Oppenheimer. As Walker-Ames lecturer, Oppenheimer would have given a series of lectures and seminars this spring on the structure of matter. Schmitz's sole immediate explanation was that "bringing Dr. Oppenheimer here at this time would not be in the best interests of the university." He later added that this did "not involve a question of academic freedom."

Student opinion, evidenced by dozens of letters to the school paper, disagreed strongly. Many faculty members publicly deplored the action. Edwin A. Uehling, acting head of the Physics Department, said "the Physics Dept. faculty are as much concerned about the implications of the president's decision as we are with the loss of an important intellectual contact," and that "many of us feel the decision . . . is inconsistent with [the University's] objective." However, the view that it was the university president's duty "to see that no controversial personage is made a member of the faculty" was also heard.

A delegation of 40 students which "marched" on the state capitol with petitions bearing 1170 signatures received some sympathy but little support from the governor and legislators, who were wary of political interference with the state university. The chairman of the Senate Committee on Higher Education observed that Oppenheimer "couldn't get security clearance from the US government. There are plenty of patriotic Americans who are top men in technical subjects that the University can obtain." Dr. Schmitz announced that he would not reconsider his decision.

In contrast, it was announced that lecture invitations extended to Oppenheimer by three universities in Oregon would not be withdrawn.

**DISPERSAL & CIVIL DEFENSE**

Both the legislative and executive branches of the government are showing interest in civil defense problems. Rep. Richard Bolling (D, Mo.) reintroduced on Feb. 7 his resolution (H. Con. Res. 66) to establish a Joint Congressional Committee on the Economics of Atomic Defense. The text of the resolution, available on request from the FAS Washington Office, states as its purpose:

"... to bring before the Congress and the American people the best judgments of scientists, lay leaders, and congressional experts on the effect of the H-bomb . . . on existing concentrations of population and industry; the possibilities for defense measures within those areas; the degree to which industrial dispersion and urban decentralization can be expected to reduce the dangers of present-day atomic warfare; the length of time and the scale of action necessary to arrange ways in which the federal government in cooperation with State and local governments can, within our free enterprise system, contribute to such dispersal or relocation policies . . ."

The FAS Executive Committee, in a statement released Feb. 7, urged "prompt passage" of the Bolling resolution and noted that: "While we continue to spend billions of dollars each month for military purposes, the basic, long-range problem of how to defend our cities against atomic attack has not received commensurate Congressional attention."

**SPECIAL COMMISSION** In testimony before a Senate Armed Services subcommittee on Feb. 22, Office of Defense Mobilization Director Flemming advocated that Congress set up a special commission on civilian defense, to report back before the middle of the year, so as to permit legislation in the present session. He told reporters the idea represented "the Administration's top thinking," according to the N. Y. Times.

Flemming said that technical information is available for a meaningful dispersal program, and that previous plans are outmoded. The "mileage yardstick" (new defense plants to be at least 10 miles outside industrial or population centers), for instance, "would disrupt the economy of some parts of the nation and would fail to take into consideration differing geographic and other factors." The federal government, he said, must set "the broad framework of policies."

**VISA CHANGES PROPOSED**

A comprehensive immigration and citizenship bill was introduced into both House and Senate Feb. 25, which includes separate eligibility criteria for immigrants and temporary visitors. Sen. Lehman (D, N.Y.) and Rep. Celler (D, N.Y.) headed a group of 13 Senate and 8 House sponsors of the measure (S. 1206 and H.R. 4430). The bill makes a clear distinction in requirements for entry between (a) aliens seeking permanent residence here, and (b) alien visitors coming here for scholarly or scientific purposes, for pleasure, or for business.

The proposal would vest all responsibility for immigration and naturalization in a new and independent Commission, instead of the present division and duplication between the State and Justice Departments. The need for consolidation had been recognized by the Hoover Commission. Lehman said the present duplication precludes "uniform and reasonably predictable application of the law" and is "expensive to the government." The Commission would be authorized to have overseas field offices for issuing visas. A Board would review visa decisions on appeal. Denials would not be subject to court review, however, although limited review is prescribed in other areas. Waiver of whatever might otherwise be grounds for exclusion would be granted on such terms and conditions as the Commission deemed appropriate to protect the national health and security. Lehman explained the need for this provision as follows:

**RESEARCH SUFFERED** "The McCarran-Walter Act has been administered as though there were no logical basis for differentiation between an immigrant for permanent residence and a visitor seeking to enter the US for business or for pleasure; or to lecture, to take part in a scientific seminar or conference, or a gathering of scholars or artists or for consultation with other specialists in the sciences or the arts. Scientific research . . . has suffered significantly in the US, because of the inability of foreign scientists and scholars to enter . . . Many international conferences on science and technology . . . are now being scheduled elsewhere, to our great loss in scientific knowledge, business, and prestige.

"Admission for permanent residence is properly denied to actual or potential subversives, but the privilege of even a temporary visit to the US is now also being denied in the cases of persons whose political thinking appears to deviate in any marked way from orthodox political concepts. Were such a criterion to be applied on a reciprocal basis by other countries, no American citizen devoted to the principles of free speech, free press, and free worship would be admissible even as a tourist to totalitarian countries . . .

"The purpose of the waiver provision in the proposed act is to restore reason and flexibility in the case of the non-immigrant, subject only to measures necessary for the protection of the national health and security."

\* \* \* \* \*

The FAS is a national organization of scientists and engineers concerned with the impact of science on national and world affairs. The Newsletter is edited by members of the FAS Washington Chapter.

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**U.S. & USSR AGREE ON NO H-TEST BAN (Cont. from Page 1)** minutely. Three disadvantages are inherent in the proposal: The most important, perhaps, is the danger that it might lead to a false sense of security since further production would not be halted by such a ban on testing. Second, it might be necessary for the US to reveal hitherto secret details of its own detection system. Finally, it may simply be too late for such a proposal to be meaningful.

These disadvantages are, in the Post's opinion, "far outweighed . . . by the potential advantages." Among the advantages are: (1) that it "might at least serve to get the disarmament discussions off dead center," (2) that enforcement would be possible without "the sort of detailed inspection system at which the Soviet Union always has balked," (3) that while it would not stop it might retard further advances in nuclear weapons development, and (4) that it would "help convince the world of the sincerity of this country's effort to reverse the drift toward war." (Copies of the Post editorial are available on request from the FAS Washington Office.)

**MOLE HILL FROM MOUNTAIN** Significantly, President Eisenhower made no effort to find fault with the proposal; he merely remarked that he saw "nothing to be gained by pretending to take little bits of items and deal with them separately." In so doing, he was expressing a feeling shared by many Americans -- that to raise the issue of H-bomb tests is to try to pretend the mountain of disarmament problems is only a mole hill. In the face of atomic and hydrogen weapons already in being and increasingly being stockpiled, to ban only further tests seems to bring little improvement indeed.

**INFORMAL "STANDSTILL" ?** Yet, so fantastic and nightmarish is our present situation that the proposal may be effective without being adopted -- or if adopted, may only recognize what already is effective. With the damage done to US reputation by the fate of the Lucky Dragon, finding a site for new tests presents serious problems. For it seems clear that public opinion outside of the US, and not only in Japan, is strongly fearful and opposed to further H-bomb tests. A Belgian public opinion research agency, for example, found that 75% of those questioned wanted further nuclear or thermonuclear experiments banned. According to the Christian Science Monitor, "A vast percentage of those queried came out with the reply: 'American experiments should be made over American territory and in no case expose the inhabitants of other countries to unknown dangers.'" And the newsletter of FAS Mohawk chapter last Dec. 10 noted that New Zealanders were greatly upset by rumors that Adm. Byrd would be seeking suitable H-bomb test sites in Antarctica next summer, at distances of 1800 miles from their homeland.

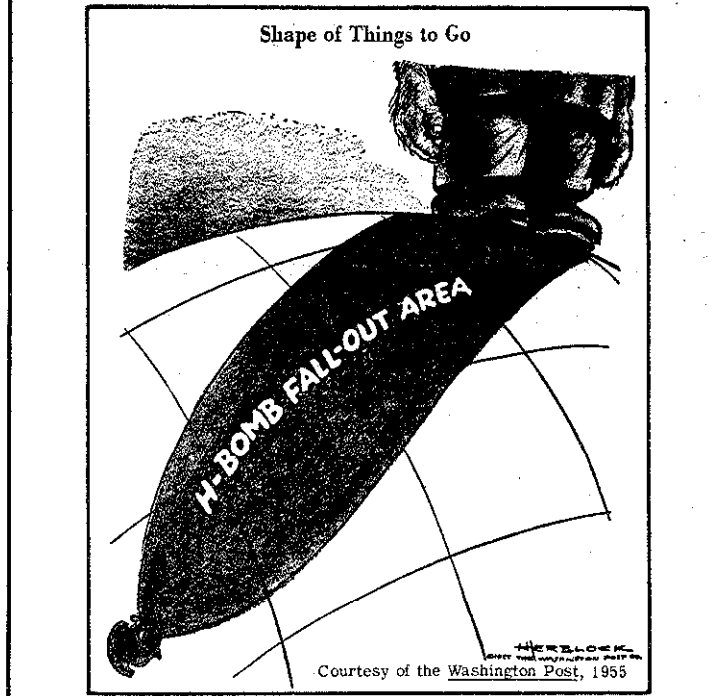
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"THE WORK OF MANY PEOPLE," a non-technical article by Edward Teller in Science of Feb. 25, gives a brief account of contributions to the development of the first US H-bomb. Stressing that "many excellent people . . . had to give their abilities for years and . . . were all essential to the final outcome," Teller said he found that at present he was "being given certainly too much credit and perhaps too much blame for what has happened." Without revealing any classified technical facts, the article names some of the principal personalities and traces the history of the thermonuclear weapon development from the late 1930's to the first full-scale test in 1952, and praises the "magnificent achievements" of the Los Alamos Laboratory and its leaders.



Whether justified or not -- and no certain answer can be given on existing data -- the fear of long-term biological effects of accumulating radiation released during tests may be a more effective deterrent than the earlier discussed physical horrors of A-bombs. These fears, registering politically, may already have given pause to future H-test plans. Inability to find politically non-sensitive test sites could halt such tests indefinitely -- in tacit unformalized admission that there are limits to the self-destructiveness which mankind will tolerate.

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