

F.A.S. PUBLIC INTEREST REPORT

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FAS INITIATES PETITION DRIVE

It has never been easy to determine what the public thinks about nuclear war. And as the period lengthens since the only example of wartime atomic destruction, 36 years ago, it becomes still more difficult. The generation that was old enough to fully appreciate the significance of Hiroshima and Nagasaki when it happened is now in its mid-fifties.

Citizens under forty were still teenagers when the Cuban Missile Crisis gave the world its last major inoculation against nuclear war. And people under twenty-five even missed being told, as school children, to put their heads under their desks as protection against nuclear blast. Thus one or even two entire generations may not be sure what the nuclear war hollering is really all about.

For that matter, even many who lived through the relevant historical periods may be less conscious than they otherwise might be of the real consequences of nuclear war. It has, after all, been discussed so often in terms of megadeaths and other inconceivables. And the human mind, faced with so many other problems, has a well-known ability to fence itself off, to become habituated, or to otherwise ignore those events which do not require immediate attention.

In this regard, nuclear war qualifies completely for repression. For few of us does it require immediate attention. It is so unthinkable as to repel consideration. And what, after all, could be done about it?

We believe however that public opinions about this subject have more than theoretical and theological significance.

Indeed, an increasing number of American policies and attitudes can be linked to the question of the infeasibility of nuclear war. So although one would think that this issue would be rather well decided by now we feel obliged to put before the public a petition (see page 3) which, in its entirety, is as follows:

"Our Nation ought not base its policies or its weapon programs on the belief that it can limit, survive, or

win a nuclear war."

We believe that a firm grasp on this principle will illuminate many important issues of the day: notions that nuclear war can be limited; ideas that it matters how much one is ahead in weapons both have in excess; interest in counterforce capabilities; proposals to rely on civil defense; talk of amending the existing treaty against anti-ballistic missile systems; the role of neutron bombs as a deterrent; the priority given to the SALT talks; and even the degree of belligerence to be tolerated in foreign policy. These connections are sketched on the back of the petition (see pg. 4).

We propose to use this petition, with the help of our members, to find out what people are, indeed, thinking. If possible and in due course, it will permit us to serve the resultant petition on relevant officials. We ask you therefore to circulate it to your friends, department, school or college using a xerox of page 3 (and its reverse side) as you find convenient. By the time you receive this, we shall also have available, for your potential use, decals stating our view that "Nuclear War is National Suicide" and extra copies of our February, 1981 newsletter which, under that same title, gives some relevant fundamental calculations. Just write us for them (see below).

To the extent that people are prepared to sign, send us the signed petitions. To the extent they are not, we would like to know what it is they are thinking. Question them and, in this connection, our February newsletter may be a way to begin a dialogue. The decal may be used to confirm and announce the adherence to our petition of any signer who wishes to put it up. The interaction may, more generally, serve to combat the apathy about nuclear war, and the habituation to the threat of war, which is so common.

Precisely because the petition touches, by implication, on so many issues of on-going relevance, this is not a petition which we would give, once and for all, to

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PUBLIC INFORMATION OFFICER APPOINTED

The Correspondents' Program described in the September newsletter, and the petition described above, are part of the growing FAS involvement in public education on a local level which will encompass a wide range of science and society issues in addition to that of nuclear

war. To direct these activities, FAS this month named Ms. Laura Stevens as its Public Information Officer and Correspondent Coordinator. Members are encouraged to call or write her to discuss ways and means of pursuing FAS goals on a local level. (See page 2)

PETITION-3; NEUTRON BOMB-5; TREATY OF TLATELOLCO-7; NOV. 11 CONVOCATION-8

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President Reagan. Instead if, in fact, it strikes a chord, we would add names to it on a continuing basis and would point to its success periodically as the matters to which it pertains arise.

In sum, we are asking our members to try this petition out for us. Over and above circulating it at their place of work, there will be a number of public occasions to use it to try to find out what the public thinks about nuclear war. During 1981-82, a veritable barrage of materials on nuclear war is going to be laid before the public. There will be a series of university teach-ins on November 11 (see pg. 8) stimulated by UCS; a week of discussion in April, 1982, organized by "Ground Zero"; and on-going events organized by a rapidly growing Physicians for Social Responsibility (PSR). And we can depend on hearing from such other contributors of similar events as: Council for a Livable World, SANE, the Arms Control Association, the Center for Defense Information, the American Committee for East-West Accord, and many others.

To the extent that you have time, help us set up public tables at the events organized by these organizations and thus to promulgate this petition and to distribute related materials. But whether or not you have time to help solicit the opinions of others, send us your own. How can we best remind our fellow citizens of the consequences of nuclear war and the utter implausibility of limiting nuclear war once begun?

CORRESPONDENTS SOLICITED

The Correspondents' Program is getting underway and we are beginning to appoint correspondents at various institutions. We believe that the program is an excellent way for members to become active in the growing effort to educate the public about nuclear war and other science and society issues while representing FAS at their institution. Do volunteer if you wish to become the FAS Correspondent at your place of work.

Through the program we hope to develop a two-way channel of communication. That is, we will be sponsoring official activities such as the petition drive from time to time, as well as making suggestions for a variety of other events and programs which correspondents could help us bring about. At the same time, we want your ideas and those of other FAS members. If you have organized, attended or simply thought of an event which you feel others should know about, please let us hear from you. In addition to sponsoring and suggesting activities, we hope that FAS headquarters will serve as a clearinghouse for members in search of materials to supplement programs. Of course, some of the most valuable material can be found in your mailbox each month—the FAS Public Interest Report. In fact, one initial suggestion would be to start saving these reports if you are not already—you may want to distribute them in the future.

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FAS PETITION: OUR NATION OUGHT NOT BASE ITS POLICIES OR ITS WEAPON PROGRAMS ON THE BELIEF THAT IT CAN LIMIT, SURVIVE, OR WIN A NUCLEAR WAR.

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*See opposite side for discussion.
Return Petitions to: Federation of American Scientists (FAS)
307 Mass. Ave. N.E., Wash., D.C. 20002*

NUCLEAR WAR IS NATIONAL SUICIDE

ON THE FEDERATION OF AMERICAN SCIENTISTS (FAS) PETITION

The Federation of American Scientists, which was created in 1945, as the Federation of *Atomic* Scientists, knows as well as any organization the special danger posed by atomic and thermonuclear weapons. Most cities can be destroyed completely by a single such weapon, and every city can be destroyed by a relatively small number of such weapons. Each superpower has several thousand nuclear weapons at the ready, but only about 100 major cities. In particular, the Soviet Union has 6,000 one-megaton range warheads which can be compared with the fact that the United States has 60% of its population in the 300 largest metropolitan areas and only 2,000 cities and towns with populations of 10,000 citizens or more. The reverse situation is similar with the U.S. having 10,000 nuclear warheads aimed at a country of about 100 large cities. After these weapons are fired, the question at issue will not be "How much was destroyed?" or even "How much of each country was left?" but "Can a united country be resurrected?"

Notwithstanding the starkness of this situation, a number of U.S. policies, actions, and tendencies are related to a failure to recognize fully these basic facts. Among them are:

a). *A belief that nuclear war can be limited:* The Reagan Administration may, explicitly or implicitly, adopt the view that nuclear war could be limited. It has already accepted as plausible certain scenarios in which Soviet limited strikes would be made with subsequent ultimatums to forestall a U.S. response. It may also come to imagine that it itself could, if necessary, engage in such limited strikes, and such subsequent calls for a halt. In fact, the dynamics of the situation make such halts most unlikely. Indeed, all signs indicate that superpower communications with their own strategic forces might fail after the initial strikes making subsequent coordinated halts quite impossible.

b). *The buying of an ability to strike Soviet ICBMs:* There is a growing U.S. interest, encouraged by on-going Soviet capabilities, in getting the ability to strike Soviet land-based missiles with high accuracy, even though it is evident that neither side can be disarmed by such attacks, and that they would result in such large numbers of casualties and such confusion as to ensure subsequent escalation to attacks on cities.

c). *Talk of amending the ABM Treaty:* There appears to be rising interest in the Administration in amending, or doing away with, a crucial already-agreed U.S.-Soviet treaty of indefinite duration prohibiting anti-ballistic missiles (ABM) except in one limited site in each nation. This treaty reflects a previously agreed consensus that nuclear war would be national suicide anyway, and that attempts to defend against it were pointless, and would only pointlessly spur the arms race by inducing more offensive warheads. This ABM Treaty of 1972 has already saved the United States tens of billions of dollars.

d). *The go-ahead on neutron bombs:* The Reagan plan to use neutron bombs, rather than to emphasize new conventional technologies, to attack thousands of Soviet tanks in Europe should war break out also violates the above principle. It is evident that the firing of thousands of such tactical neutron bombs can only be expected to induce tactical nuclear weapon responses from the other side, and consequent escalation to the general destruction of both societies. War games of European conflict all show this overwhelming tendency.

Some Administration officials justified the neutron bomb as a tactical advantage in conventional conflict outside Europe. But such use would, for small immediate advantage, destroy the precedent of nuclear non-use—now a third of a century old. U.S. security ultimately rests on this precedent since our nation is most unlikely to be destroyed by conventional means.

e). *Faith in Civil Defense:* Some current Administration officials, in the past, have actively campaigned for massive civil defense programs including industrial protection, with the argument that, if these recommended programs were completed, nuclear war could be survived. These programs have not yet been recommended by the Administration but we fear they will be.

f). *Degree of belligerence in foreign policy:* What degree of belligerence can prudently be afforded in a world in which a nuclear war which no one wants can always emerge and destroy our 200 year old republic? Many citizens seem to want more belligerence. As a consequence, this or another Administration may overstep the bounds of caution in pushing our luck in some future crisis. The main antidote: a clear awareness of the suicidal quality of nuclear war.

g). *Low priority given to the Arms Talks.* If the Administration really understood that nuclear war was national suicide—and since such a war could always emerge—why would it give such a low priority to serious U.S.-Soviet SALT talks? It needs to be reminded of what is at stake.

h). *The irrelevance of the debate over "who's ahead":* Speaking generally, much of the strategic arms debate inside the United States turns on arguments that we, or the Russians, are ahead in some numerical or qualitative aspects of the arms race. A firm grasp of the above principle that nuclear war can no longer be won is central to the irrelevance of much of this debate.

Some background on FAS views on this subject appear in the February, 1981 issue: "Nuclear War is National Suicide" and more copies of this newsletter can be secured by applying to our office \$1.00 for single copies and \$.20 for each additional copy. Decals asserting the view "Nuclear War is National Suicide" are also available. Persons willing to circulate this petition will be sent, while they last, some additional material for their background and free copies of the February issue. These can be used to persuade the uncommitted that nuclear war is indeed something that ought not be risked.

NEUTRON BOMB: A MISTAKE IN POLITICAL, MILITARY, AND GEOPOLITICAL PLANNING

The Administration's decision to build neutron bomb warheads appears: to run counter to its NATO political goals; to provide a relatively poor and risky method of achieving its military goals; and to set up a potentially dangerous context for its geopolitical desire to maintain deterrence of Soviet attack in Europe.

In the first place, the political furor surrounding the decision can only imperil the Administration's program for adding 572 Ground Launched Cruise Missiles and Pershings in Europe. It is significant that the State Department urged delay because the State Department is headed by a former SHAPE Commander more fully aware than is any other high-level Administration official *both* of the political context in Europe and of the limited utility of neutron warheads.

In the second place, the Administration is wrong in emphasizing the utility of neutron bombs for destroying Soviet tank columns. Neutron bombs are not especially useful for this purpose because they normally leave the enemy tank crews able to function for days to hours to minutes depending upon the accuracy with which the warheads are delivered. An Army Manual chart is attached to show how crews may live on for uncertain periods. Soviet tactics will surely respond by providing the tank crews with instructions suitable for these "impressed kamikaze" fighters. And they may provide extra crews for tanks only disabled by radiation damage to the crews.

Moreover, since the Soviet Union has 40,000 tanks the number of neutron bomb warheads would have to be immense requiring barrages of nuclear weapons rather than a series of selective uses. Thousands of neutron warheads

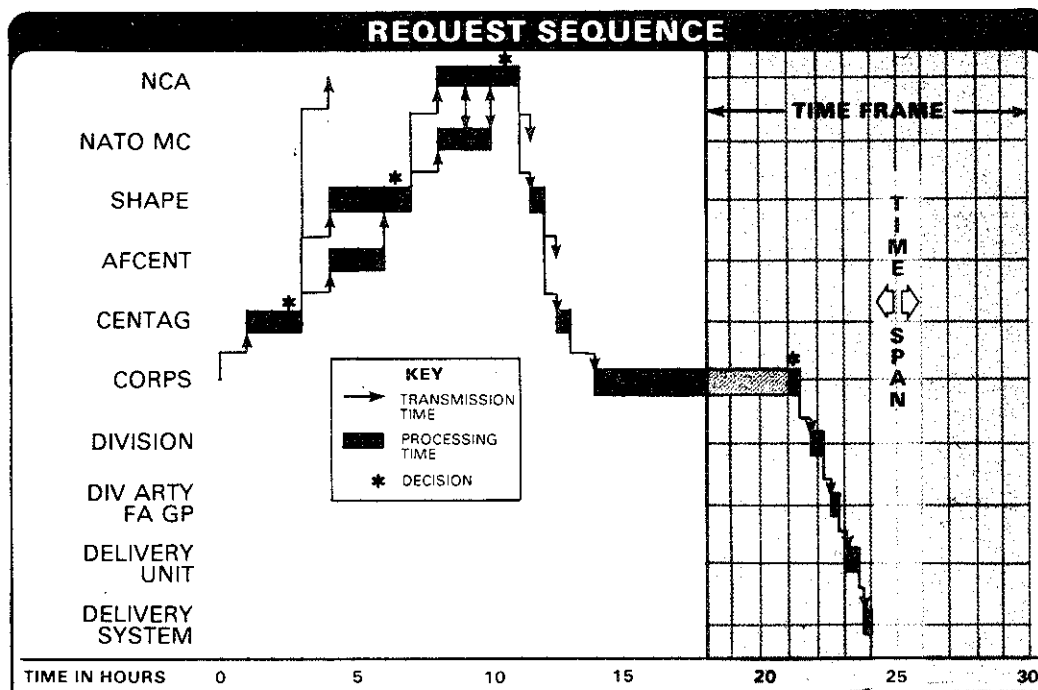
(Continued on page 6)

HOW LARGE A USE OF NEUTRON BOMBS?

Warsaw Pact forces in Central Europe have some 20,000 tanks and a single Warsaw Pact breakthrough operation on that front could involve some 600 tanks and 500 armored fighting vehicles with as many as six major breakthrough efforts proceeding simultaneously. This would come to 6600 Warsaw Pact armored vehicles. If each neutron bomb could destroy three, on the average, this would still require 2,200 enhanced radiation weapons. This could irradiate 28,000 square kilometers or roughly 11% of the total land area of the Federal Republic.

Warsaw Pact forces fearing neutron bomb attack could be expected to hug the Western forces and populated areas so as to discourage use of the atomic weapons on allied forces. If we assume for the radiated areas only the average population density for the country as a whole (247 persons per square kilometer), more than 5 million West German civilians would be potentially affected by the neutron flux with millions dying promptly or within a few months.

Military use could not be very precise because a tank moving cross country at 30 miles per hour would move from the target point to a location 900 meters away within a minute and this is about the lethal radius of a one kiloton neutron warhead (for immediate incapacitation of the crew). Because forward observers could not secure release of atomic weapons anywhere near so quickly, tanks would have to be barraged to compensate for outdated intelligence and delays in the command and control system. Efforts to streamline delegation of authority of release would lead to still more collateral damage of civilians and Western forces.



This chart shows the 25 hours required to move from request to fire nuclear weapons to firing them; 3 hours occur after corps decision. Army Field Manual, FM-100.

(Continued from page 5)

would be needed even to make a contribution.

A more cost-effective and a more decisive way to destroy a tank is with precision guided (conventional) munitions mounted on helicopters, or armored vehicles, and provided to individual soldiers (or even handed out to "week-end warriors"—civilians trained to fire them). It is ironic that the Administration should be emphasizing nuclear weapons for anti-tank warfare at just the time when technology appears to be providing a cheap conventional antidote to tanks: weapons costing a few tens of thousands of dollars that can destroy million-dollar tanks with a single shot.* Perhaps twenty-five precision guided munitions could be bought for the cost of a single round of a neutron warhead: approximately \$1 million.

From a geopolitical point of view, the Administration's goal is to strengthen its defenses against Soviet attack so as the better to deter that attack. From that point of view also, neutron bombs seem an error. Although it is often asserted that neutron bombs make it easier to cross the nuclear threshold, it seems likely that the United States will not be much less deterred from firing the neutron bombs than from firing other tactical nuclear weapons. This is certainly true if the technical facts are correctly assessed by the political leadership. And it is probably obvious anyway. As President Carter put it: "These weapons would not make that decision [to cross the nuclear threshold] any easier." *It is relevant that no reputable Western strategist known to us has ever suggested that it would be feasible to keep nuclear firings only at the neutron bomb level.* Thus, unlike the case of the precision guided munitions, the Russians could still test our willingness to cross the nuclear threshold, stopping if we did fire such weapons, or escalating deliberately. More likely everything would go out of control. Indeed, the enhanced likelihood (if it existed) that we might be about to use bar-

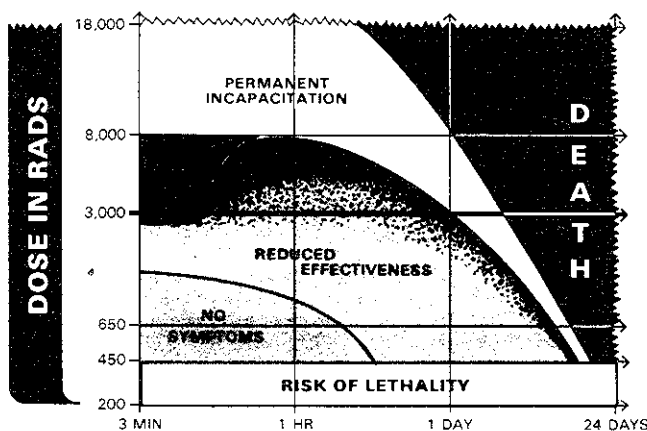
rages of neutron warheads could, in a crisis, lead the Soviet Union to preempt with tactical nuclear weapons. In any case, they will respond with their own larger weapons. Here is what the 1979 Arms Control Impact Statement said on this point:

Nor can the fact that the W70-3 warhead may cause less collateral damage be expected to moderate possible Soviet responses. Its use would be no less likely than the present Lance warhead to evoke Soviet retaliatory use of tactical nuclear weapons. And unless the Soviets develop a comparable warhead, their response with their existing warheads would create the same kind of devastation that RB/ER [Reduced Blast/Enhanced Radiation] weapons would avoid because of their reduced blast effects.

Worse, one obviously must now assume that the Russians will, in due course, build neutron warheads themselves. And for an aggressor, weapons that are advertised as not destroying what they are trying to conquer may seem a good idea. What if the Russians used them offensively against the West and threatened to escalate nuclear use only if we did? While escalation seems, nevertheless, to be the sure outcome of such a gambit, this does suggest for the worse-case-planners, that neutron bombs on both sides do not necessarily help the defenders even if they worked as advertised, and the hype about their limited effects were believed, which it should not be.

Here again a (real) conventional defense with precision-guided munitions is the only course that could significantly add to what must already be an enormous Soviet reluctance to move into Western Europe, with all the risks that would entail.

It should be noted that, from a technical point of view, there is much less here than meets the eye. These neutron bombs are still enormously destructive at 1,000 tons of TNT equivalent; the larger bombs of World War II were



The immediate incapacitation radiation level is 8,000-18,000 rads (unit of measure for radiation) but, an active soldier suddenly exposed to 3,000 rads could become incapacitated within 3-5 minutes. He may recover to some degree in about 45 minutes, but due to vomiting, diarrhea, and other radiation sickness symptoms, he would be only partially effective until he dies within a week. A soldier exposed to 650 rads initially shows no symptoms, but loses some of his

effectiveness in about two hours and can be expected to die in a few weeks under battlefield conditions. Exposure in the 100 rad region usually has little effect. Accordingly, in conventional-nuclear combat it would be prudent to subject front line enemy to 3,000-8,000 rads or more, enemy to the rear to 650-3,000 rads, and avoid subjecting friendly forces and civilians to an unacceptable dose level (100 or more rads).

This chart and printed material is taken from the Field Manual No. 100-5 of the U.S. Army and reveals dramatically how uncertain it will be whether particular tank crews are disabled and for how long. And even the charts show averages where, in fact, there is great individual variation in response to exposure. Indeed, individuals will sometimes be recovering somewhat after initial incapacitation and so each individual will show some variation in ability to fight.

only 2 tons of TNT or 500 times smaller. The propaganda campaign mounted in favor of this new device is reminiscent of the debate in the 1950s over "tactical" nuclear weapons. It was said then that these would importantly change the strategic situation in Europe because they were "smaller" while providing more bang for the buck. Now, a quarter of a century later, it is being argued that these still smaller tactical nuclear neutron bombs will make some kind of important change in the European strategic context. In fact, no usable doctrine was ever found for the earlier tactical nuclear weapons.

What we are witnessing now, in historical retrospect, is further product differentiation by weapon builders. They seem to sell still more weapons in an otherwise saturated market. The problem of European defense needs, if anything, better conventional forces. There is no nuclear solution.

Finally, Secretary Weinberger has emphasized that these warheads could be used outside of NATO. Evidently, he believes they would be considered more usable, for example, in a Persian Gulf situation than other nuclear weapons. Perhaps they would have been used to end the siege of Khe Sanh in Vietnam when nuclear weapons were believed to have been considered. While these uses might be militarily effective in the short run in some cases, they would represent the end of a most valuable precedent of non-use since Nagasaki. This precedent has now lasted 36 years and is the strongest bar to future use of nuclear weapons. Ultimately our national security rests on developing the notion that nuclear weapons are unusable, much as many consider biological warfare unthinkable. This is because, so long as nuclear weapons are not used, our nation can survive any war. But if nuclear weapons come to be considered usable they will—as the Colt revolver did in the old West—become the great equalizer between nations and may, in particular, destroy our own. Do we really want to try to destroy the existing nuclear allergy by pretending that neutron bombs are a usable kind of nuclear bomb? The fact is that when you have seen one nuclear weapon, you have largely seen them all. Variations in the proportions of radiation, blast and heat are not very important to almost any strategic context.

All in all, this Administration appears to be obsessed with nuclear weapons and to believe both that such weapons are the key to European defense and that strategic nuclear buildups are the key to American freedom of maneuver abroad. But with 6,000 tactical nuclear weapons in Europe and with 10,000 strategic nuclear warheads at the ready, we have secured far more than enough nuclear "deterrence."

Both critics and external supporters of the Administration's defense planning are likely to coalesce in believing that deficiencies in conventional force spending and planning are far more important than nuclear force deficiencies. In particular, the Administration appears to be destroying what consensus exists for heightened defense spending. □

*See, for example, the current issue of *Scientific American*, "Precision-guided Weapons," Paul Walker, August, 1981.

RATIFYING TLATELOLCO

Robert A. Pastor*

After the Israeli raid on the Iraqi nuclear plant, Eugene Rostow, Director of the Arms Control and Disarmament Agency, suggested in an interview with the *New York Times* that the U.S. would encourage an effort to make the Middle East into a nuclear weapons-free zone much as Latin Americans had done with the Treaty of Tlatelolco. Rostow's suggestion is commendable, but one hopes that before he undertakes a new initiative in the Middle East, he places his energies behind completing the Latin American Treaty. The U.S. has not yet ratified a crucial Protocol of the Treaty of Tlatelolco (Protocol I) and that is one of the last requirements that would bring the Treaty into effect.

Vice President Hubert Humphrey signed *Protocol II* on behalf of the United States in 1968, and the Senate ratified it on May 12, 1971. So far so good. And Jimmy Carter signed *Protocol I* on May 26, 1977 at the White House in the presence of the Mexican Foreign Minister. But the Senate has not yet ratified it.

An effort on the part of the Reagan Administration to seek the ratification of Protocol I would not only provide needed momentum for creating the first nuclear weapons-free zone in the populated world, it would also provide some needed credibility to the Reagan Administration's stated interest in arms control and non-proliferation. Indeed, one test of the seriousness of Rostow's proposal for the Middle East is whether the Reagan Administration vigorously presses for ratification of Tlatelolco.

All that the U.S. would give up in ratifying Protocol I would be the option to deploy or store nuclear weapons in Puerto Rico, the Virgin Islands, or our military base in Guantanamo. There is no strategic advantage to putting nuclear weapons in these areas rather than, say, a southern U.S. state, and considerable political and diplomatic disadvantage that comes from infringing Caribbean sensitivities and flouting Tlatelolco, a Latin American initiative. Both the Defense Department and the Joint Chiefs of Staff have testified in support of ratification noting that "the proliferation effect of accession...would advance our general security interests." Though initially concerned that the treaty could abridge our transit rights and freedom of navigation, these concerns were assuaged by a thorough review of the negotiating history and a supplemental understanding which confirms that the treaty in no way affects U.S. transit or navigation rights.

In brief, ratification by the U.S. would mean the loss of something we don't need—storing nuclear weapons in three Caribbean areas—and gain us something—momentum on non-proliferation and enhanced relations with Latin America—from which all would profit. □

*Robert A. Pastor, currently a Guest Scholar at Brookings Institution, was Coordinator for Latin American and Caribbean Affairs on the National Security Council Staff in the White House during the Carter Administration.

NOVEMBER 11 CONVOCATION AGAINST NUCLEAR WAR

Our one-time Boston Chapter, Union of Concerned Scientists (UCS) is turning its attention from critiques of the nuclear reactor program to include analysis of nuclear war and is catalyng discussions at a substantial number of colleges and universities across the nation on Veterans Day, November 11.

At the request of UCS, FAS has agreed to cosponsor the event and to encourage FAS members to participate in them. UCS has supplied the following list of persons (many already FAS members) who will be in charge of the Committees organizing the events and to whom help could be offered.

Participating Institutions

Institution	Principle Organizer
Amherst College	Allan Krass
Arizona State University	Mark Reader
Boston College	Rosaria Salerno
Bryn Mawr	William Davidon
Cal Poly—San Luis Obispo	David Hafemeister
Cal Tech	Marvin L. Goldberger, President
Carleton College	Michael Casper
Carnegie-Mellon	Lincoln Wolfenstein
Colby College	Charles Hauss, Robert McArthur
Colorado State University	Robert Lawrence
Columbia University	Cyr Leventhal
Cornell University	Kurt Gottfried, Peter Stein
Dartmouth College	Richard Hyde
Fermi Labs	Raymond Brock
Hampshire College	Allan Krass
Harvard University	Roger Fisher, Larry Hill

Harvard Medical School
Haverford College
Mass. Inst. of Technology
Middlebury College
North Carolina A&T State
University
Ohio State University
Princeton University
Smith College
Stanford University
Univ. of Cal—Berkeley
Univ. of Cal—Los Angeles
Univ. of Cal—San Diego
Univ. of Cal—Santa Cruz

University of Chicago
University of Denver
Univ. of Mass—Amherst
University of Michigan
University of Minnesota
University of Montana
University of New Mexico
Univ. of N.C.—Greensboro
University of Northern Iowa
University of Pennsylvania
University of Pittsburgh
University of South Carolina
University of Toronto
University of Washington
Virginia Commonwealth
University
Wayne State University

Coleen Clark,
Debbie Walker
William Davidon
Jonathan King
David Rosenberg
Larry Morse
Alan Millett
Hal Feiverson,
Frank von Hippul
Allan Krass
Jeff Dunham
Owen Chamberlain
Donald Kalish
James Brune
Lawrence Kraus,
Joel Primack
Ruth Adams
Christopher Carr
Marvin Kalkstein
Marc Ross
Ed Anderson
E.W. Pfeiffer
Kevin Cahill
Jerry Miesner
Alvin Sunseri
Geno Segre
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