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THE BARUCH PLAN: U.S. DIPLOMACY ENTERS  
THE NUCLEAR AGE

PREPARED FOR THE  
SUBCOMMITTEE ON NATIONAL SECURITY POLICY  
AND SCIENTIFIC DEVELOPMENTS

OF THE  
COMMITTEE ON FOREIGN AFFAIRS  
U.S. HOUSE OF REPRESENTATIVES

BY  
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(As part of an extended study of the interactions of science and  
technology with United States foreign policy)



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<sup>2</sup> Documents available from the Foreign Affairs Committee only.

## FOREWORD

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AUGUST 9, 1972.

With the detonation of the first atomic bomb at Hiroshima, Japan, in 1945 the United States and the world entered the nuclear age. The development of the bomb revolutionized world affairs and set off a strategic arms race which has cost the participants—principally the United States and the Soviet Union—many billions of dollars.

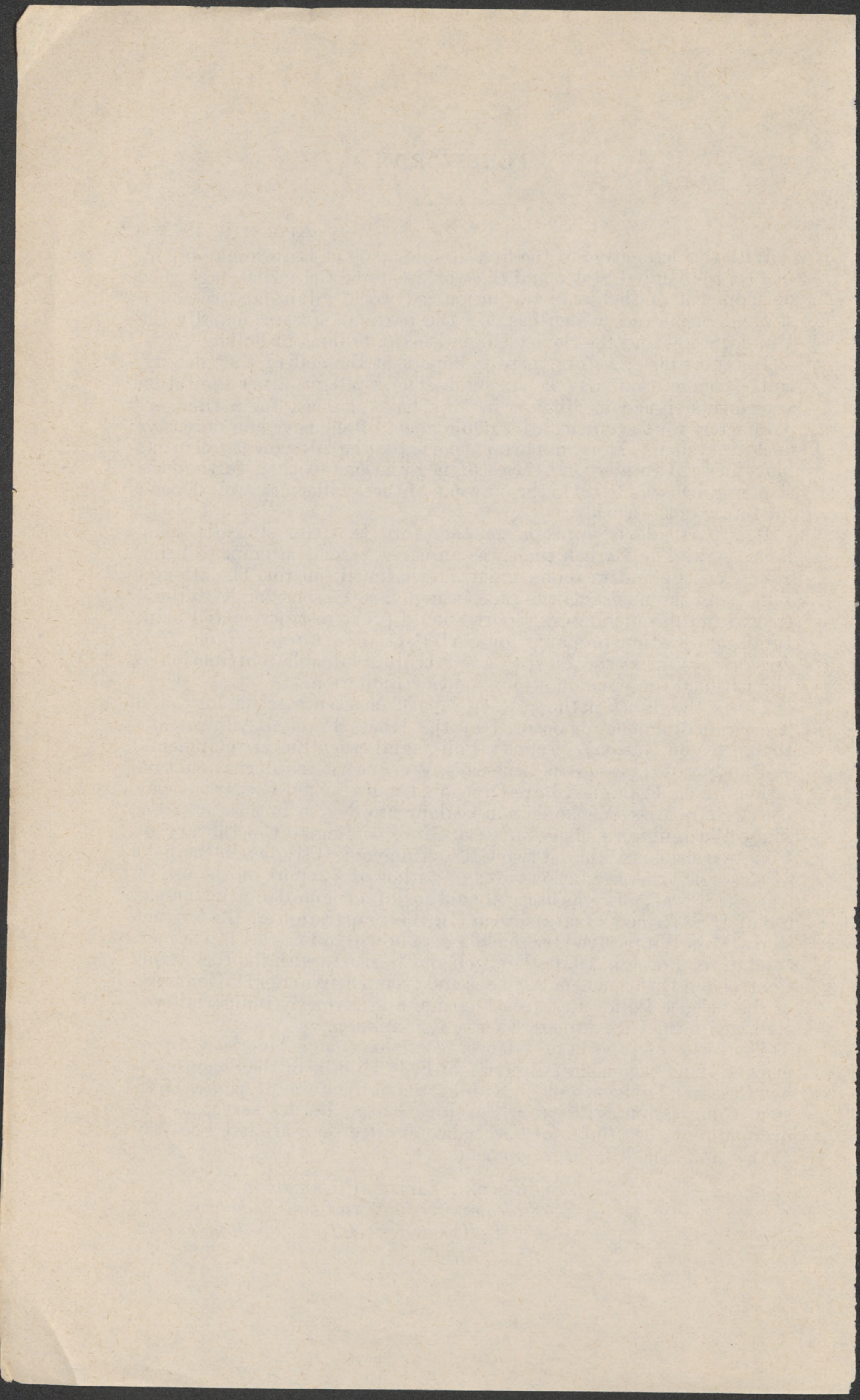
Today as never before there is hope that the end of that deadly, costly competition may be in sight. The strategic arms limitation agreements signed in Moscow in May have, at least for a time, set parameters for the quantitative deployment of offensive and defensive nuclear systems. More important perhaps, the Moscow agreements look forward to a second series of negotiations to curb further the strategic arms contest. On the outcome of those talks may well depend the future of the world.

It is particularly appropriate, therefore, that this study is being issued now. The Baruch plan was an early, serious attempt to bring atomic energy and weapons under international control. The attempt failed and the nuclear arms race ensued. The reasons for its failure, treated in this outstanding report, should prove instructive and helpful as our Nation prepares for SALT II. *The Baruch Plan: U.S. Diplomacy Enters the Nuclear Age* is truly a valuable contribution to our national dialogue on strategic arms limitation.

This is the eighth in the series of reports on science, technology, and American diplomacy sponsored by the House Foreign Affairs Subcommittee on National Security Policy and Scientific Developments. The author of this study is Leneice N. Wu, analyst in international relations of the Foreign Affairs Division, Congressional Research Service (CRS). Miss Wu holds a baccalaureate degree in classics from Mary Washington College in 1968. Since coming to the Library of Congress she has authored two CRS chronological studies in the field of strategic arms limitations, was co-author of a report on the use of tear gas in war, and was associate author of a committee print on the use of U.S. Armed Forces abroad. In the preparation of the present study, Miss Wu received technical assistance from Charles R. Gellner, chief of the Foreign Affairs Division and formerly with the U.S. Arms Control and Disarmament Agency; and from Dr. Warren H. Donnelly, of the Science Policy Research Division and formerly industrial specialist with the U.S. Atomic Energy Commission.

The series of reports on science, technology, and American diplomacy is under the general direction of F. P. Huddle of the Science Policy Research Division and W. R. Johnston of the Foreign Affairs Division, Congressional Research Service. George Berdes serves as coordinator of the study for the Subcommittee on National Security Policy and Scientific Developments.

CLEMENT J. ZABLOCKI, *Chairman,*  
*Subcommittee on National Security*  
*Policy and Scientific Developments.*



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## I. INTRODUCTION

This study is concerned with the first international negotiations on the control of atomic energy, during the years immediately following World War II. The arrival of the atom bomb was a technological event of unparalleled significance for international affairs. The ultimate meaning of the bomb itself, as distinct from the possible peaceful applications of atomic energy, was that it raised the cost of general war for total victory to an unacceptable level. This fact radically altered the basis for the positions of the diplomats at the bargaining table, and brought with it the problem of how to evaluate and to communicate the significance of the new development. At the same time, a changed pattern of relations among nations had emerged as a result of the worldwide upheaval of World War II. Participants in this new configuration of power faced the unique technological and diplomatic situation created by atomic energy.

Technological advances in the field of atomic energy added a new dimension and a new vocabulary to world affairs through such concepts as mutual deterrence and preemptive strikes. The dynamics of a nuclear arms race were dimly perceived at the outset of the nuclear age; even so, it is not clear that awareness of this potential would have prevented its development. In retrospect, it is understandable how the atom bomb, a product of science and technology and a tool of diplomacy, prompted a world drive for control.

More important to this study is the fact of failure in the initial efforts of this drive. Despite the strong impetus for diplomatic initiative in response to a great technological achievement, the negotiations got nowhere then and have made little progress since. A principal aim of the study is to examine the causes of this costly failure in order to provide insights into the interactions among science, technology, and diplomacy when they are confronted with a technological development of the first magnitude—in this case, one with urgent implications for the future of all mankind.

### *Definition of the Problem and Scope of the Study*

Because these early efforts to control nuclear weapons occurred more than 25 years ago, much historical discussion has accumulated in published sources. In light of this fact and considering the purpose of this series of reports, the study will not duplicate the history of these early international negotiations. Rather, it will focus on issues associated with the interaction of science, technology, and diplomacy.

The advent of the atomic weapon in 1945 represented a unique technological advancement: applications of the newly acquired knowledge regarding atomic energy could serve either constructive or destructive purposes. This factor, combined with the immediate recognition of atomic energy development as a great step forward in man's inquiry into scientific knowledge, signified that such development had political implications of global proportions. Further recognition of the importance of the technological development of atomic energy for U.S.

foreign policy was inevitable. Its significance was enhanced by the fact that the first demonstration of the technology was its use as a weapon in actual warfare. Considering the decisive role which the atomic weapon played in ending the war with Japan, its use gave rise to a number of questions for the United States on both the international and national levels.

On the international level, the nations of the world recognized a need to prevent proliferation of atomic energy weapons technology and capabilities. Questions were raised in official quarters both at home and abroad with regard to the intentions of the United States, as sole owner of atomic weapons, and how this fact would affect its relations with the rest of the world. Officials in the U.S. Government perceived the urgency of devising a policy regarding the U.S. contribution to an international arrangement for the control of atomic energy to prevent its employment for weapons purposes, and also perceived the need for monitoring by some international means the country-by-country development of atomic energy.

The new nuclear science and its early technology also offered the potential for development of atomic energy to serve beneficial purposes, national and international. Traditionally, scientific advancements are shared readily within the scientific community without regard to national boundaries. However, the military implications of atomic energy generated pressures to prevent traditional free communication in this instance.<sup>1</sup>

Moreover, concern for the military applications of atomic energy necessarily overrode attention to peaceful uses. In turn, these military security factors presented obstacles and limitations for the hoped-for international cooperation in developing peaceful uses, for the formulation of a U.S. policy regarding its role in international cooperation, and for a program within the United States itself to pursue peaceful exploitation.

What challenges did the innovation of the atom bomb present to traditional concepts of diplomacy? Did the policymakers in the United States or the diplomats of the negotiations meet them? Were the scientific and technological factors of the situation used to support or to correct established principles of U.S. foreign policy? What steps were taken by diplomats and scientists to understand each other's points of view? Were they successful? How did they fail?

These are a few of the salient questions to which this study is addressed. The following discussion offers a brief historical overview and an explanation of the political, military, and technical factors of the atmosphere in which the negotiations took place. During the nuclear policymaking process in the United States and in the international negotiations, certain issues arose which are pertinent to this series of studies on science, technology, and American diplomacy. The study examines the development of these issues from the U.S. policy deliberations through their outcome in the negotiations. Finally, it discusses a number of prominent features in the negotiations and sets forth some general concluding observations.

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<sup>1</sup> It was the early nuclear scientists themselves who adopted a policy of secrecy in the United States, well before the start of the Manhattan Project, the wartime government effort which developed the atom bomb.

## II. A SHORT CHRONOLOGY OF ATOMIC CONTROL DIPLOMACY AFTER WORLD WAR II

A chronological summary of the sequence of early developments aiming toward international controls may be helpful in setting the stage for consideration of the international negotiations and why they failed.

Deliberations on U.S. policy in light of the development of the atom bomb had been initiated as early as May 1945, when Henry L. Stimson, the Secretary of War, led a committee which reported to President Truman on the subject. Shortly thereafter, in June, the stage was set for the machinery to handle the international negotiations on the control of atomic energy, with the signing of the United Nations Charter. Two months later the weapon was actually used on Hiroshima on August 6, 1945.

Once the use of atomic energy for destructive purposes had been demonstrated, the Administration took action to publicize as much information as was judged appropriate to contribute to public understanding of the weapon and its significance for the United States. An important step in this direction was the publication in August 1945 of the Smyth report,<sup>2</sup> which explained the basic scientific information on the bomb but kept its disclosures within the limits defined by security considerations. President Truman took initial steps to enunciate U.S. atomic energy policy at both the national and international levels in two major addresses in October 1945.<sup>3</sup>

### *Preliminary Agreements on Nuclear Sharing; U.S. Preparations To Negotiate*

Public attention shifted to international activity during the closing months of 1945. On November 15, an agreement was concluded by the United States, Canada, and the United Kingdom. Called the "Three Nation Agreed Declaration," this agreement laid a foundation for international action to control atomic energy. The Soviet Union was included in this endeavor when the Moscow Declaration was signed the following month, as a result of meetings of representatives of the Governments of the United States, Great Britain, and Russia. In the United States, Assistant Secretary of State Dean Acheson had been appointed earlier in December to head a committee to report to the Secretary of State on U.S. policy for the international control of atomic energy.

In January 1946, the newly formed United Nations created an organization to deal with the specific problem of controlling atomic energy when it drew up the terms of reference of the United Nations Atomic

<sup>2</sup> Henry D. Smyth. *A General Account of the Development of Methods of Using Atomic Energy for Military Purposes Under the Auspices of the U.S. Government, 1940-45.* (Washington, D.C.: U.S. Government Printing Office, 1945.)

<sup>3</sup> President Truman delivered a message to Congress on atomic energy on Oct. 3, 1945, and elaborated on U.S. atomic energy policy in his Navy Day address on October 27, in New York. Complete texts of both can be found in *Public Papers of the President of the United States, 1945.* (Washington, D.C.: U.S. Government Printing Office, 1961), pp. 362-366, 431-438.

Energy Commission (UNAEC). At the same time, the deliberations of Acheson's group were getting underway as an additional group of policymakers, largely from the scientific community, provided the technical advice necessary to an understanding of the problem and to formulating an appropriate policy. This group, known as the Board of Consultants, was led by David Lilienthal, Chairman of the Tennessee Valley Authority.

The findings of these two groups, known as the Acheson-Lilienthal report,<sup>4</sup> were released in March 1946. In the same month, Bernard M. Baruch was appointed by President Truman to speak for the United States in the UNAEC. Combining his own views on international control of atomic energy with the proposals set down in the Acheson-Lilienthal report, Baruch presented the U.S. proposal, which became known as the Baruch plan, at the opening session of the UNAEC on June 14, 1946.

#### *Impasse of Negotiations in the United Nations*

Opening proposals of the Soviet Union were presented to the UNAEC on June 19. The extensive differences between the policies of the two countries were to undergo few modifications during the negotiations to follow. Once the initial proposals of the major powers had been made, procedural arrangements of the UNAEC were devised and implemented. An important group was the Scientific and Technical Committee, which examined the technical feasibility of control. The report of this group was issued to a major organ of the UNAEC, called Committee Two, in October 1946. Following discussions by this latter body, a report of the whole UNAEC was made to the United Nations Security Council on December 31, 1947.

The Security Council did not resolve the questions raised by the first report of the UNAEC on international control of atomic energy, and referred the problem back to the UNAEC in March 1947. The second session of that body had been underway since January 1 and continued until September 1947, when a second report was issued to the Security Council. Again, decisive action was not forthcoming from the Security Council, and further deliberations were carried on by the UNAEC, which issued its third and final report on May 7, 1948. This document recorded the admission by the negotiators that their deliberations had reached a stalemate. The General Assembly pressed for continuation of the discussions, but they were finally suspended in November 1949. In the meantime, an important event substantially altered the character and outlook of the negotiations and added to the existing difficulties of an extremely complex international problem. This event was the explosion by the Soviet Union on September 23, 1949, of its own nuclear device.

#### *The Historical Context of the Negotiations; the Turbulent Postwar Years*

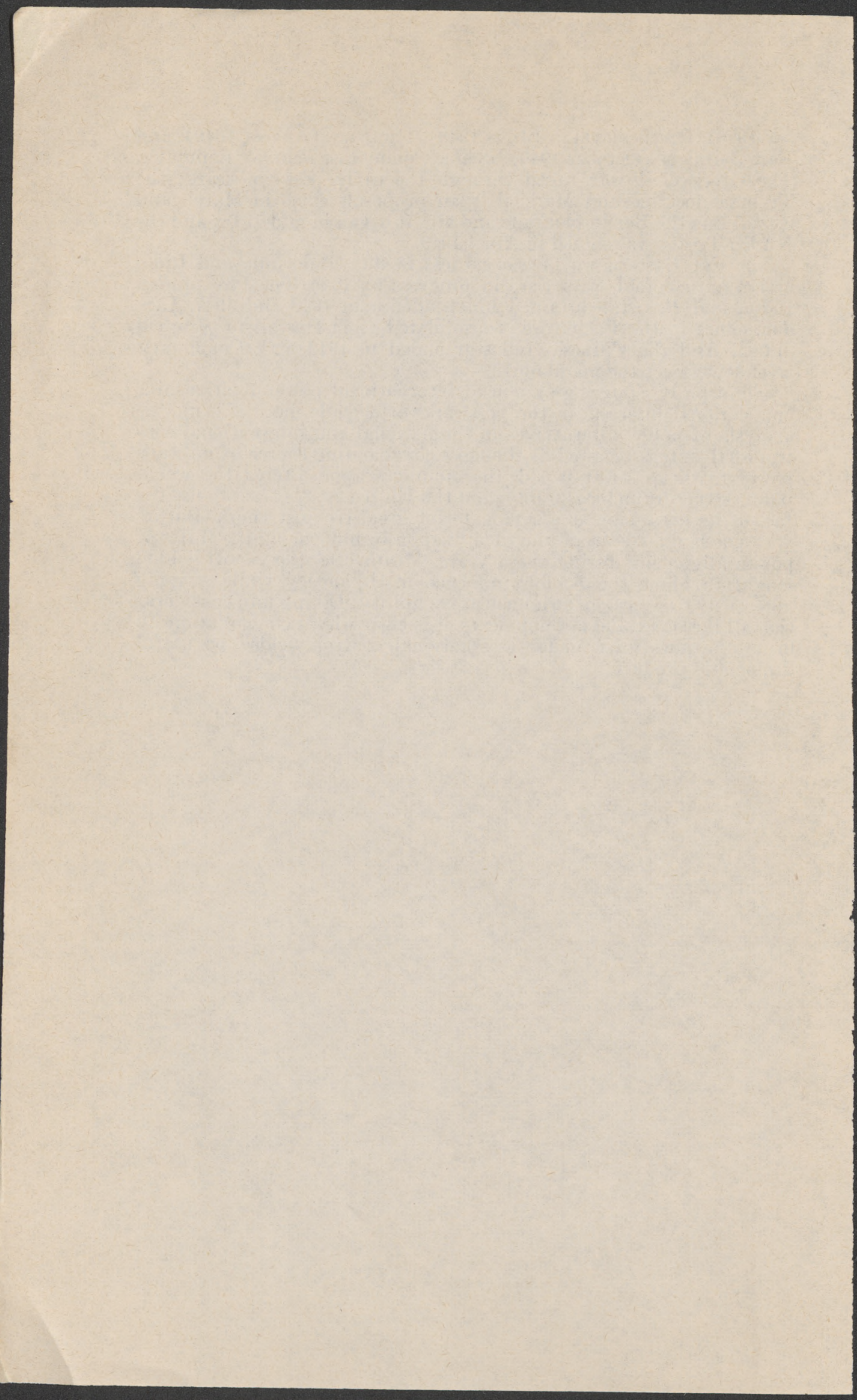
The events reviewed in this study occurred during a turbulent 4 years during which the great powers and the lesser powers moved to establish postwar mechanisms and configurations of power, security, and influence. The splitting of Europe occurred as Bulgaria (Septem-

<sup>4</sup> U.S. Department of State, *A Report on the International Control of Atomic Energy*, Publication No. 2498 (Washington, D.C.: U.S. Government Printing Office, 1946), referred to as the "Acheson-Lilienthal Report."

ber 1946), Czechoslovakia (June 1948), Hungary (August 1949), and East Germany (October 1949) became Communist People's Republics. The Greek civil war raged through the early postwar years; the Truman doctrine and Marshall plan proposals came in March and June 1947; the Berlin blockade and airlift began in mid-1948; and the NATO Treaty was signed in April 1949.

The Far Eastern world was no less in flux. Indochina and Indonesian anticolonial wars were in progress by 1946. The Philippines, India, and Pakistan attained independence in 1946 and 1947. U.S. dominance in the Pacific was consolidated from Hawaii to occupied Japan. And the Chinese civil war ended in 1949 with Communist ascendancy over the mainland.

The rapidly changing system of international power relationships and national interests in the postwar world made more difficult the analysis of policy alternatives in the national and international control of the atom. Viewed as the most commanding source of military power in the postwar world, the atomic weapon altered the world power structure immeasurably, and the United States tried to use the fact of its possession as a surrogate for great troop strength. But its very potency made it an unusable weapon in influencing the shifts of power alignment during these years. Meanwhile, the Soviet Union sought to blunt the bomb's influence in diplomacy while striving vigorously to secure its own nuclear capability. Taking into consideration all these parallel developments, it is clear why the negotiations to bring the new force under international control yielded no useful diplomatic product.



### III. THE POSTWAR PARADOX: COLD WAR AND INTERNATIONALISM

The historical setting for U.S. diplomatic efforts aimed at the international control of atomic energy contained two opposite and irreconcilable trends. On the one hand, the end of World War II had witnessed the emergence of two great powers, the United States and the Soviet Union, whose basic ideologies were intrinsically at odds with one another. The early years of the postwar period when the Baruch plan was being negotiated were to reveal a growing antagonism in United States-Soviet relations which was to become known as the cold war. On the other hand, there also emerged a widespread attitude of international cooperation in world affairs, as, in June 1945, the diverse powers attempted to establish a framework for peace through the United Nations, an organization which was to receive a serious challenge in its attempts to establish international control of atomic energy. And despite the increasing awareness of the widening breach between the United States and the Soviet Union, efforts were made to achieve some measure of cooperation between the two countries, e.g., the postwar conferences of ministers.

#### *Preparation for International Control Efforts*

On the international level, a major concern was the control of atomic energy, both as a means of destruction and as a new power which could benefit mankind, and the nations of the world acted to set up international machinery to cope with this problem. The first step was an agreement among those powers which had been involved in the development of atomic energy during the war, the United States, Great Britain, and Canada. Meetings were held in Washington among President Harry S. Truman, British Prime Minister Clement Attlee, and Canadian Prime Minister W. L. Mackenzie King; as noted above, the resulting agreement of November 15, 1945 is known as the Three Nation Agreed Declaration. In it, the three countries declared their intention to share with all nations the scientific information associated with atomic energy for peaceful purposes. However, the Declaration acknowledged the dilemma posed by the practical applications of atomic energy, in that much of the information necessary to carry out the industrial applications was virtually the same as that needed for weapons production. It was agreed, therefore, that it was necessary to withhold this information until appropriate safeguards could be established to insure that it would be used only for peaceful purposes. To this end, the three heads of state suggested that the United Nations Organization set up a Commission which would make recommendations on the question of international control to the United Nations.<sup>5</sup>

Russian agreement to the principles of the Three Nation Agreed Declaration was obtained the next month, at the Conference of Ministers in Moscow, and was made public on December 27 in the Moscow

<sup>5</sup> For a complete text of the Three Nation Agreed Declaration, see U.S. Department of State, *The International Control of Atomic Energy, Growth of a Policy*, Publication 2702 (Washington, D.C.: U.S. Government Printing Office, 1946), pp. 118-120.

Declaration, a Soviet-Anglo-American statement. In addition to supporting the idea of establishing a Commission in the United Nations, the Moscow Declaration contained the text of a proposed resolution to establish the organization, and invited France, China, and Canada to cosponsor it at the first session of the U.N. General Assembly in January 1946.<sup>6</sup> The text of the Moscow Declaration was incorporated unchanged in a resolution which was passed by the General Assembly without a dissenting vote on January 24, 1946, and which thereby established the United Nations Atomic Energy Commission (UNAEC).

Under the terms of the resolution, the UNAEC was to operate closely within the framework of the Security Council, with its provision for the veto power, a fact with significance for subsequent negotiations on the control of atomic energy. The Commission was to be composed of one representative of each country on the Security Council and receive directions from the Council "in matters affecting security." The resolution added, "On these matters, the Commission shall be accountable for its work to the Security Council," a provision which was included as a result of the initiative of the Soviet Union at the Moscow Conference. The rationale behind this approach rested on the assertion that the most important aspect of the control question was the assurance of security. Even at this early stage, the concern over the military applications of atomic energy dominated the discussions, diverting attention from ways to share knowledge necessary in the economic or industrial applications of atomic energy.<sup>7</sup> The resolution also set down the terms of reference for the Commission's proposals as follows:

- (a) For extending between all nations the exchange of basic scientific information for peaceful ends;
- (b) For control of atomic energy to the extent necessary to ensure its use only for peaceful purposes;
- (c) For the elimination from national armaments of atomic weapons and of all other major weapons adaptable to mass destruction; and
- (d) For effective safeguards by way of inspection and other means to protect complying States against the hazards of violations and evasion.<sup>8</sup>

#### *Formulation of Atomic Policy in the United States*

The commanding position of the United States as a world power resulting from its role in World War II and in helping to shape the postwar world led to an unprecedented involvement in international relations. As the nation in sole possession of atomic weapons, the United States bore an added responsibility to seek international control over this new and terrible form of destruction.

Not only was it necessary to define national policy on international control, but it was also important to determine an appropriate means of domestic control, a responsibility which had been given to the Army

<sup>6</sup> See *Ibid.* pp. 125-127 for the text of the Moscow Declaration.

<sup>7</sup> Joseph I. Lieberman, *The Scorpion and the Tarantula, The Struggle to Control Atomic Weapons, 1945-49* (Boston, Mass.: Houghton Mifflin Co., 1970), p. 213.

<sup>8</sup> "Establishment of a Commission to Deal With The Problems Raised by the Discovery of Atomic Energy," United Nations General Assembly Resolution I, *Resolutions Adopted by the General Assembly During the First Part of Its First Session from 10 January to 14 February 1946*, United Nations Document A/64 (London, England: Church House, 1946), p. 9.

during the war. National control of weapons production and disclosure of information necessary for this purpose posed controversy. In addition, consideration was given to the role of U.S. domestic control in relation to international negotiations and control.

#### DOMESTIC CONTROL

The congressional controversy over domestic control of atomic energy occurred during the early stages of formulation of U.S. policy on international control and during the first months of the negotiations in the United Nations. A prominent issue in the vigorous public debate concerned the extent of the military role in U.S. atomic energy programs. Proposals ranged from a military-dominated commission responsible for U.S. development of atomic energy to complete exclusion of the military. Equally difficult was the issue of the kind of control to be placed on the release of information on industrial applications, that is, data which could apply to weapons production as well, without obstructing the exchange of information within the scientific community necessary to foster maximum development of atomic energy.

The Atomic Energy Act of 1946, approved July 26, provided for a full-time civilian Atomic Energy Commission whose members were to be appointed by the President with the advice and consent of the Senate. It also established the Joint Committee on Atomic Energy of the Congress to oversee atomic energy matters. Provision was made for consultations with and recommendations from a Military Liaison Committee on "matters relating to military applications,"<sup>9</sup> but final decisions were left to the civilian Commission. As far as dissemination of information was concerned, the law set up a category called "restricted data," which included primarily data associated with atomic weapons and fissionable materials. The law then set down the nature of the punishments to be used against those convicted of transmitting restricted data for the purpose of injuring the United States or for granting an advantage to a foreign country. Exchange of information with foreign countries on the use of atomic energy for industrial purposes was forbidden until Congress declared "by joint resolution that effective and enforceable international safeguards against the use of atomic energy for destructive purposes have been established."<sup>10</sup>

One section of the law was devoted to the relationship between domestic control and any international control arrangements which might be concluded. The law defined "international arrangement" as a treaty approved by the Senate or Congress, and recognized the possibility that portions of the U.S. law might be inconsistent with such an arrangement. If this should be the case, according to the law, the provisions of the international arrangement would take precedence as long as the agreement was in force. Moreover, the Commission was to "give maximum effect to the policies contained in any such international arrangement."<sup>11</sup>

The Atomic Energy Act of 1946 may have had some effect on foreign perceptions of the U.S. position in the negotiations on international

<sup>9</sup> Sec. 2(c), 60 Stat. 757.

<sup>10</sup> Sec. 10(a)(1), 60 Stat. 766.

<sup>11</sup> Sec. 8(c), 60 Stat. 765.

control. For example, an argument in the United States which favored complete civilian control had been the assertion that a military-controlled program might convey the impression that the general purpose of U.S. atomic energy programs was oriented toward weapons production, thereby presenting an unfavorable prospect for U.S. willingness to seek or accept international control. As the bill was finally passed by the Congress, the emphasis on civilian control may have helped avoid such an impression. Moreover, the law marked an unprecedented intrusion of the Federal Government into private enterprise through its provisions for Government ownership and control over fissionable materials and provisions for various licensing powers with respect to facilities and activities. Thus, by these provisions the Congress demonstrated its awareness of the unprecedented importance and dangers of the development of atomic energy. The section on international control may have served to show a positive U.S. view toward international control and preparedness to implement it.

However, the considerable precautions which were taken regarding release of information may have served to reflect a U.S. desire to retain its atomic monopoly. Although these precautions were also based on U.S. security considerations and on U.S. suspicions of how other countries might use atomic weapons once they had acquired them, nonetheless, the debate on this issue and the resulting provisions in the law may have inspired doubts in other countries as to the sincerity of U.S. pledges to relinquish its monopoly to an appropriate international authority. In any case, the following conclusion of a State Department publication seems applicable:

The evolution of a policy for domestic control not only provided parallels for the problems that were certain to be met in international planning, but it illustrated as no other process could the magnitude and complexity of the task that awaited inter-Governmental collaboration.<sup>12</sup>

#### HASTY DEMOBILIZATION OF U.S. MILITARY FORCES

A relevant consideration in the evolution of early U.S. policy for the atom is the overall state of the U.S. defense posture in 1945 and 1946.<sup>13</sup> With the advent of peace, the American public and the troops themselves clamored to bring the armies home, on the grounds that there was no longer a need to maintain the wartime level of military manpower. Besides being influenced by the euphoric atmosphere brought on by the end of war, many people looked to the newly developed atomic bomb as a sufficient source of military strength. A week after the bomb was dropped on Hiroshima in August 1945, President Truman responded to public and congressional pressure, and announced that inductions would drop from 80,000 to 50,000 per month and that within 12 to 18 months, 5½ million men would be released from the service. By April 1946, the number of those discharged from the Army had reached nearly 7 million. By June 30, 1946, out of a total of about 3 million military personnel remaining on

<sup>12</sup> State Department, *Growth of a Policy*, p. 21.

<sup>13</sup> The following discussion is based primarily on Lieberman, *The Scorpion and the Tarantula*, pp. 227-234.

active duty in all of the U.S. armed services combined, approximately 1.4 million were in the Army.<sup>14</sup>

Many U.S. Government officials, especially among the military services, had opposed such rapid demobilization of the armed forces because of their mistrust of the Russians. One historian cites the power vacuum in Europe which resulted from rapid U.S. withdrawal as at least one reason for the imposition of Soviet hegemony in Eastern Europe during this period.<sup>15</sup> The dramatic cuts in the armed forces also were to have an effect on the negotiations for the control of atomic energy. One source interprets the situation as follows:

As the nation's conventional military resources grew weaker and weaker at a time when Soviet dynamism made it imperative that the United States be strong, the place of atomic weapons in the overall American military posture would naturally become more critical and worthy of protection.<sup>16</sup>

#### FORMULATION OF U.S. POLICY ON INTERNATIONAL CONTROL

*Early efforts:* Even before the first atomic bomb was used during the war, some persons in the United States were aware of the potential need for control of atomic energy and encouraged the Administration to initiate action to formulate its policy on the subject. Largely at the recommendation of Vannevar Bush, a scientific advisor to President Truman and Chairman of the Office of Scientific Research and Development, and another presidential advisor, Harvard University President James B. Conant, Truman called on Henry L. Stimson, Secretary of War, to appoint a group to consider the future needs in the area of control, on both the international and domestic levels. Stimson recognized that to deal with the unique situation created by the development of the atomic bomb required knowledge in both science and politics; he gathered advisors from these areas, including Bush and Conant, Ralph Bard, the Undersecretary of the Navy, William L. Clayton, Assistant Secretary of State for Economic Affairs, and James F. Byrnes, who would become Secretary of State two months later, to serve as the President's personal representative on the Committee. Other members were George Harrison, president of the New York Life Insurance Company and a Special Assistant to Stimson, Karl Compton, a physicist and president of the Massachusetts Institute of Technology, and several scientists who had led in the development of the bomb: Dr. J. Robert Oppenheimer, Dr. Ernest O. Lawrence, Dr. Arthur H. Compton, and Dr. Enrico Fermi. The unpublished report of what is known as the Secretary of War's Interim Committee, which met during May 1945, reached a number of conclusions affecting international control which were to remain at issue in future attempts toward such control.

Within a month after the first atomic weapons were used, in August 1945, a report was issued which explained the basic scientific facts associated with the development of atomic energy. Prepared in 1944 by a physicist who had been involved in the bomb effort, Dr. Henry D.

<sup>14</sup> U.S. Department of Defense, *Selected Manpower Statistics* (Washington, D.C.: U.S. Government Printing Office, 1971), p. 19.

<sup>15</sup> Thomas A. Bailey, *A Diplomatic History of the American People* (New York: Appleton-Century-Crofts, 1964), p. 778.

<sup>16</sup> Lieberman, *The Scorpion and the Tarantula*, p. 234.

Smyth of Princeton, the report was released to avert any misconception or wild speculation by the public concerning the new weapon. Moreover, it was hoped that by supplying a substantial amount of information at this time, the report would alleviate public pressure, especially from the scientific community, for release of all pertinent information. The Smyth report supplied basic facts, but not enough to aid rival efforts to develop an atomic weapon.<sup>17</sup>

The decision to release the Smyth report was much debated within the Administration, but the reasons noted above prevailed. The Smyth report was later used as a basic source for the discussions in a Scientific and Technical Committee of the UNAEC. The conclusion of the report is often cited when the study is considered in relation to international control:

We find ourselves with an explosive which is far from completely perfected. Yet the future possibilities of such explosives are appalling, and their effects on future wars and international affairs are of fundamental importance. Here is a new tool for mankind, a tool of unimaginable destructive power. Its development raises many questions that must be answered in the near future.

\* \* \* These questions are not technical questions; they are political and social questions, and the answers given to them may affect all mankind for generations \* \* \* In a free country like ours, such questions should be debated by the people and decisions must be made by the people through their representatives. This is one reason for the release of this report. It is a semi-technical report which it is hoped men of science in this country can use to help their fellow citizens in reaching wise decisions. The people of the country must be informed if they are to discharge their responsibilities wisely.<sup>18</sup>

Among the initial public statements of U.S. policy on arrangements for international control was President Truman's address to Congress on October 3, 1945. Affirming the U.S. commitment to seek international control of atomic energy and the U.S. desire to share information for peaceful purposes, the President announced the impending discussions with Canada and Great Britain which were to result in the Three Nation Agreed Declaration. On October 27, 1945, he further defined U.S. policy by enunciating five basic principles which, for the most part, had originated with Stimson's committee. These conclusions might be viewed as a combination of the primary technological and political factors which would condition the evolution of the U.S. plan for international control and the negotiations to achieve such control. Bernhard G. Bechhoefer, associated with early U.S. arms control negotiations in the Department of State, has summarized these principles as follows:

1. No nation can long maintain a monopoly of atomic weapons.
2. No nation could long maintain or morally defend a monopoly of peaceful benefits of atomic energy.

<sup>17</sup> Richard G. Hewlett and Oscar E. Anderson, Jr. *The New World 1939/1946, A History of the United States Atomic Energy Commission*, vol. I (University Park, Pa.: Pennsylvania State University Press, 1962) pp. 400-407.

<sup>18</sup> Smyth, *General Account of the Development of Methods of Using Atomic Energy for Military Purposes*, p. 165.

3. For the foreseeable future there can be no adequate military defense against atomic weapons.

4. All the initial processes in the production of fissionable materials and certain subsequent processes are identical whether their intended use or purpose is peaceful or military.

5. The nuclear chain reaction required for the release of atomic energy is now based upon uranium or thorium as the only suitable raw materials occurring in nature. Ores containing these materials are only relatively rare. Although rich deposits are not numerous, the lower concentrations of the ores have a wide geographical distribution.<sup>19</sup>

*Preparations for negotiations in the UNAEC:* In January 1946, 1 month after the conclusion of the Moscow Declaration, James F. Byrnes, Secretary of State, announced that he had appointed a committee "to study the subject of controls and safeguards necessary to protect this Government" during the international negotiations on atomic energy. Assistant Secretary Acheson had been named chairman; the other members were Bush, Conant, General Leslie Groves—head of the Manhattan project which had developed the atomic bomb during the war—and John McCloy, former Assistant Secretary of War. Although the members of the committee had some knowledge of atomic energy matters from the standpoint of both its technological and political aspects, Acheson suggested appointing a Board of Consultants to advise the committee on the technological aspects of international control. David Lilienthal, Chairman of the Tennessee Valley Authority, was given the task of leading the Board. Its other members were Chester Barnard, president of New Jersey Bell Telephone, who had been active in the U.N. Relief and Rehabilitation Administration; Harry A. Winne, an engineer and a vice president of General Electric Company, who had participated in the Manhattan Project; and Dr. J. Robert Oppenheimer, the physicist who had directed the weaponry installation of the Manhattan Project at Los Alamos, New Mexico. The composition of the two groups was intended to provide the talents necessary to consider both the political and technological aspects of the problem of providing a basis for a workable system of international control.

In the course of the next two months, the Board drafted a basic plan for international control. Following a series of meetings with Acheson's committee, which led to certain modifications and additions, it produced a document entitled "A Report on the International Control of Atomic Energy." Known as the "Acheson-Lilienthal report," the study set down the basic technological factors involved in the development of atomic energy, particularly those which would affect the nature of the international control system. Once these considerations had been provided, the Board outlined the basic features of a control plan, governed primarily by the technological data. On the whole, the Board regarded its work "*not as a final plan, but as a place to begin, a foundation on which to build.*"<sup>20</sup> The report was released in late March 1946 as a basis for public discussion.

<sup>19</sup> Bernhard G. Bechhoefer, *Postwar Negotiations for Arms Control* (Washington, D.C.: Brookings, 1961), p. 33.

<sup>20</sup> State Department "Acheson-Lilienthal report," p. viii.

Writing in 1948, J. Robert Oppenheimer summarized the general trend of thinking within the scientific community toward the atomic challenge which confronted U.S. diplomacy:

The control of atomic weapons always appeared possible only on the basis of an intensive and working collaboration between peoples of many nationalities, on the creation \* \* \* of supra-national patterns of communication, of work, and of development. The development of atomic energy lay in an area peculiarly suited to such internationalization, and in fact requiring it for the most effective exploitation, almost on technical grounds alone. The development of atomic energy lay in a field international by tradition and untouched by pre-existing national patterns of control. Thus, the problem as it appeared in the summer of 1945 was to use our understanding of atomic energy, and the developments that we had carried out, with their implied hope and implied threat, to see whether in this area international barriers might not be broken down, and patterns of candor and cooperation established which would make the peace of the world.<sup>21</sup>

*The U.S. negotiator and final steps to define policy:* In the meantime, on March 18, 1946, to bring the issue to the United Nations, the President named Bernard M. Baruch U.S. representative to the UNAEC. One source offers the following description:

Bernard Mannes Baruch \* \* \* had by his 75th year become a symbol of America to his fellow Americans as well as to people all over the world. An immensely successful financier who had built a fortune in the lusty days of business boom, a public servant and sought-after counselor to Presidents of both political parties, Baruch was one of the most trusted men in all of America. The fact that he was Jewish seemed to assure his place in the public mind because it gave his life that quality of equal opportunity realized, of Horatio Alger, that is so important to America's self-image.<sup>22</sup>

Included in the delegation to the UNAEC were Baruch's choices from leading members of the banking business: Herbert Swope, John M. Hancock, and Ferdinand Eberstadt; the fifth member of the delegation was Fred Searls, a mining engineer, formerly a journalist, and head of the New York State Racing Commission. Richard C. Tolman, who had served as a scientific advisor to General Groves, was chosen for the same role in Baruch's delegation.

Aside from the fact that Baruch spoke for U.S. policy on international control of atomic energy, his appointment might be considered in two respects with regard to the central issues of this study: the primary motives behind the appointment and his role in the policy-making process. As to the reasoning behind the appointment of Baruch, at this time the issues surrounding the domestic control of atomic energy were far from resolved, and prominent among them was the possibility of excessive restrictions on the release of information. Congressional hesitation to allow a free flow of information had been ex-

<sup>21</sup> J. Robert Oppenheimer, "International Control of Atomic Energy," *Bulletin of the Atomic Scientists*, v. 4, no. 2 (February 1948), pp. 41-42.

<sup>22</sup> Lieberman, *The Scorpion and the Tarantula*, p. 261.

pressed sufficiently to make it reasonably clear that the United States would be limited, if not completely crippled, in its ability to meet its secret agreements with the British for postwar collaboration on atomic energy matters.<sup>23</sup>

His appointment was apparently motivated by a belief that he could help enlarge the Administration's freedom of action in the field of international negotiation. Baruch represented the kind of public servant who could be entrusted with America's security, as well as one who was respected in international circles. Indeed, the chairman of the Senate Foreign Relations Committee pledged Baruch's confirmation without a hearing, once he had assured the committee in writing that "there would be no treaty and no disclosures without safeguards, and that no agreement of any kind would be entered without the consent of Congress."<sup>24</sup>

The appointment and acceptance of Baruch appear to have been based primarily on respect for his political acumen. At any rate, the motivations behind the choice of the chief negotiator were not of the same character which prompted the appointment and work of Acheson's committee and the Board of Consultants. Indeed, by some persons, Baruch was not thought to be qualified for the job. The members of the Board and Acheson's committee declined to continue in these groups under Baruch, partly on the grounds that if Baruch pursued policies with which they disagreed, they wanted to retain the right to voice their opposition.<sup>25</sup>

One member of Baruch's group—namely, Hancock—reacted negatively to Baruch's suggestion that the Board of Consultants continue its work under the auspices of the State Department. Hancock stated:

These problems are not often purely scientific problems. They blend very quickly into political problems \* \* \*. The scientists tend to be unbending and calculating in the field of science—which is natural—but they carry over their inelasticity into arguments in the field of international affairs, politics in the proper sense, and negotiation.<sup>26</sup>

Apparently there was little common outlook between those representing mainly a scientific approach, who had developed the recommendations for a policy of international control of atomic energy, and those representing chiefly a political approach, who were responsible for conducting the diplomatic negotiations to implement the emerging policy.

<sup>23</sup> In August 1943, Roosevelt and Churchill had signed an executive agreement, known as the Quebec Agreement, which was not made public, and affirmed Anglo-American cooperation on atomic energy during the war. A year later, the two leaders signed an aide-memoire to supplement the earlier agreement, which provided for full collaboration between the two countries following the war. Attempts were made to renegotiate the agreement at the time of the Truman-Attlee-King conference, when the Americans asserted that active collaboration could not be carried out through an executive agreement. Nonetheless they agreed, at least in principle, to the idea of equal partnership, in the form of "full and effective cooperation." Eventually in April 1946, when the British pressed for further fulfillments, Truman informed them that he interpreted this phrase to include only the field of basic scientific information, and thereby finalized the U.S. decision to withdraw from any arrangement which would have involved lending practical assistance to endeavors such as building and operating production plants. The primary rationale behind this policy was that the agreement could not be kept secret under the provisions of the U.N. Charter and public control efforts which were about to begin. After the Atomic Energy Act of 1946 was passed, compliance with the agreements, as the British interpreted them, would have been legally forbidden. Hewlett and Anderson, *History of the United States Atomic Energy Commission*, pp. 278-280, 477-479.

<sup>24</sup> Lieberman, *The Scorpion and the Tarantula*, p. 264.

<sup>25</sup> Hewlett and Anderson, *History of the United States Atomic Energy Commission*, p. 560.

<sup>26</sup> Lieberman, *The Scorpion and the Tarantula*, p. 291.

As to Baruch's role in the policymaking process, the negotiator's own view of the part he should play, as well as that of his advisors, would have a substantial influence on the shape of U.S. policy, and on the course of the negotiations. He resented the fact that the Acheson-Lilienthal report had been published, lest it be regarded as a statement of U.S. policy, thus placing him in the role of a mere "messenger boy." Only after consultations with the President and Byrnes was Baruch satisfied that his personal views on atomic energy control would be considered, although later accounts by Truman and Baruch differ regarding their perceptions of the extent of Baruch's powers at that time.<sup>27</sup>

Although Baruch had asked Acheson's committee and its Board of Consultants to remain at his disposal during the negotiations, this arrangement did not materialize. Some meetings were held between Baruch's delegation and the two groups. These encounters provided the forum for expression of a variety of views on U.S. policy but not on a sustained basis.

#### *Abortive Efforts in the United Nations Toward Control*

On June 14, 1946, the end product of these meetings, and of discussions within the Administration, was enunciated by Baruch at the opening session of the UNAEC. The views of both the military services and the Congress had been considered, and some of the basic ingredients of the Acheson-Lilienthal report had been retained; other important characteristics had originated with Baruch and his deputies.

#### THE U.S. PROPOSAL

In Baruch's speech to the opening session of the UNAEC, he noted that his proposal was made as a basis for discussion, although it eventually came to be regarded as a rather firm statement of the U.S. position. Baruch proposed that an International Control Authority be established "to which should be entrusted all phases of the development and use of atomic energy." It would control or own all atomic energy activities potentially dangerous to world security, and would control, license, and inspect all others. Its functions would include fostering the beneficial uses of atomic energy, and conducting research and development in the field, in order to remain at the forefront of potential new developments. Once the Authority was established, all bomb manufacturing would be halted and existing bombs destroyed, and the Authority would possess all the information associated with atomic energy. This proposal marked the first time that diplomats had sought to establish a worldwide system of control and use of a scientific discovery.

An important point which was included, and a major contribution of Baruch, concerned the issue of enforcement of the arrangement for international control. Because of the serious nature of atomic energy questions, Baruch expressed the view that any countries which pursued activities that ran counter to or usurped those of the Authority should be subject to punishments. Specific violations were listed, such as possession or manufacture of an atomic weapon. Moreover, in order to ensure that violators would be punished, Baruch proposed that the

<sup>27</sup> Hewlett and Anderson, *History of the United States Atomic Energy Commission*, pp. 557-560.

veto power in the Security Council would not apply on questions concerning the fulfillment of sanctions.<sup>28</sup>

In the course of the negotiations, the U.S. delegation submitted three memoranda which elaborated on the U.S. position.<sup>29</sup> These documents and the speeches of Baruch set forth the details of the U.S. position on the various issues covered in the discussion below.

#### THE SOVIET PROPOSAL

The Soviet proposal was presented at the second meeting of the UNAEC on June 19, 1946, by Andrei Gromyko, Deputy Foreign Minister and the Soviet Representative on the U.N. Security Council. Demanding that atomic energy should be used only for peaceful purposes, he proposed that a first step should be a convention outlawing the production and use of atomic weapons. Following such an agreement, he continued, there should be established "a system of supervision and control to see that the conventions and agreements are observed, and measures concerning sanctions against unlawful use of atomic energy."<sup>30</sup>

At this time, Gromyko introduced two resolutions to implement the Soviet principles of international control. The first called for an agreement to ban the use and production of atomic bombs and to destroy existing weapons within three months of the conclusion of the agreement. This resolution also provided that the parties to the proposed agreement would pass legislation to punish violators of the agreement. The second resolution proposed that two committees be established: one to make recommendations on the exchange of scientific information, and another to examine methods of insuring compliance with the prohibitions of the agreement, including sanctions. The only direct response by Gromyko to the U.S. proposal was the expression of Soviet opposition to elimination of the veto:

Efforts made to undermine the activity of the Security Council, including efforts directed to undermine the requirements of unanimity of the members of the Security Council, upon questions of substance, are incompatible with the interests of the United Nations \* \* \*. Such attempts should be resisted.<sup>31</sup>

The veto question was to remain at issue throughout the negotiations.

One source has described the Soviet proposals as inchoate:

Gromyko's proposals of June 19 have frequently been described in the Western press and by the Soviet representatives themselves as the "Soviet plan"; but they really constituted no plan at all. Not, if by a plan, one comprehends a systematic

<sup>28</sup> For a complete text of Baruch's speech, see "Proposals for an International Atomic Development Authority." Department of State Bulletin, v. 14, no. 364 (June 23, 1946), pp. 1057-1062, or State Department, *Growth of a Policy*, pp. 138-147.

<sup>29</sup> The three memoranda were entitled U.S. Memorandum No. 1. Submitted to Subcommittee No. 1 of the United Nations Atomic Energy Commission, New York, July 2, 1946; U.S. Memorandum No. 2, Dealing with the Functions and Powers of the Proposed Atomic Development Authority. Submitted to Subcommittee No. 1 of the United Nations Atomic Energy Commission, New York, July 5, 1946; and U.S. Memorandum No. 3, Dealing With the Relations Between the Atomic Development Authority and the Organs of the United Nations, Submitted to Subcommittee No. 1 of the United Nations Atomic Energy Commission, New York, July 12, 1946.

<sup>30</sup> Joseph L. Nogee, *Soviet Policy Toward International Control of Atomic Energy*. (Notre Dame, Ind.: University of Notre Dame Press, 1961), p. 36.

<sup>31</sup> *Ibid.*, p. 37.

and comprehensive procedure for action. Gromyko's "plan" was, in fact, the enunciation of three or four basic principles which guided Soviet policy (promotion of peaceful development of atomic energy, prohibition of atomic weapons, agreement on international control, and the retention of full sovereign freedom of action) plus proposals for the further organization of the Atomic Energy Commission to deal with the problems of control and the exchange of scientific information. On the exact form of international control, Soviet statements were deliberately vague.<sup>32</sup>

#### DEBATE AND IMPASSE

Early in the negotiations, the structure of the UNAEC was organized to include four committees: a Scientific and Technical Committee, a Legal Advisory Committee, Committee Two to examine all the questions associated with a control plan, and Committee One to coordinate the work of the other three committees. In July 1946, at the second session of Committee Two, Soviet representative Gromyko delivered a major speech condemning the U.S. proposals, and declaring that

as they are presented now [the proposals] could not be accepted by the U.S.S.R., either as a whole or in their separate parts.<sup>33</sup>

When further efforts to negotiate seemed fruitless, it was decided to postpone the deliberations of Committee Two until a report from the Scientific and Technical Committee had been submitted.

The report of the latter Committee, similar in purpose to that of the Acheson-Lilienthal groups, was given to Committee Two on October 2, 1946. Committee Two had passed a resolution suggesting that the Scientific and Technical Committee "present a report on the question whether effective control is possible, together with an indication of the methods by which \* \* \* effective control can be achieved."<sup>34</sup> The Scientific and Technical Committee had decided to confine its considerations to the requirements of a control system as dictated solely by the technical characteristics of atomic energy development, and disclaimed any responsibility for taking political feasibility into account. Obviously, the major portion of the information on atomic energy was supplied by the United States, primarily through the Smyth report and the Acheson-Lilienthal report. In light of this fact, the Soviet representative to the Committee interpreted the conclusions of the Committee as "hypothetical and conditional" because the Soviets considered the information "limited and incomplete."<sup>35</sup> Despite this statement, the members of the Scientific and Technical Committee concluded that "we do not find any basis in the available scientific facts for supposing that effective control is not technologically feasible."<sup>36</sup>

<sup>32</sup> *Ibid.*, pp. 38-39.

<sup>33</sup> State Department, *Growth of a Policy*, p. 81.

<sup>34</sup> As quoted in First Report on the Scientific and Technical Aspects of Control. In United Nations Atomic Energy Commission. "First Report of the Atomic Energy Commission to the Security Council, 31 December 1946," *Official Records*. Special Supplement. Report to the Security Council. (Lake Success, New York: 1946), p. 20.

<sup>35</sup> *Ibid.*, p. 50.

<sup>36</sup> State Department, *Growth of a Policy*, p. 86.

In addition, the Committee reemphasized the scientific principle which had provided a basic element in the efforts to establish international control of atomic energy, when it stated:

There is an intimate relation between the activities required for peaceful purposes and those leading to the production of atomic weapons; most of the stages which are needed for the former are also needed for the latter.<sup>37</sup>

The report defined the various dangerous points in atomic energy development at which some form of safeguard should be applied, but made no recommendations for specific methods of safeguards.

Committee Two continued its deliberations and prepared a report which set forth specific safeguards for various activities, but these were deemed only the basic elements of a plan and not a complete plan for control.

The report on safeguards and that of the Scientific and Technical Committee were included in a report prepared by the full membership of the U.N. Atomic Energy Commission, and submitted to the Security Council on December 31, 1946. The report had been approved by 10 members of the Commission, with the remaining two, the Soviet Union and Poland, abstaining. Following this expression of majority approval, Baruch and his staff resigned on the grounds that the U.S. representative to the United Nations (at this time, Warren Austin) should serve as the U.S. spokesman in the Security Council. This first report of the UNAEC offered various findings and recommendations based largely on the proposals submitted by the United States. By March 1947, when its debate on the provisions of the first report failed of agreement, the Security Council passed a resolution which referred the discussions back to the UNAEC and requested a second report from that body. The major sources of disagreement in the negotiations are discussed below. There was to be little narrowing of these differences in the subsequent negotiations of the UNAEC.

One source describes the "deadlock" at this time as "particularly ominous not because of specific Soviet objections to the majority plan, but because Soviet criticism was made a part of its ideological conflict with the West."<sup>38</sup> Some of the U.S. policymakers who had engineered the U.S. plan, including both scientists and politicians, became disillusioned with the negotiations, and even suggested that the United States withdraw from them. However, consultations with U.S. allies had discouraged such an idea, and the negotiations continued "because world opinion would not let them stop."<sup>39</sup>

In September 1947, the UNAEC submitted the second report to the Security Council, elaborating on the specific recommendations for control in the first report. Besides engaging in this exercise, the second round of the UNAEC deliberations had considered a list of 12 amendments which the Soviet Union proposed be applied to the findings and recommendations of the first report. These amendments, which sought to alter some of the fundamental features of the majority plan, were not accepted by the Commission. Examples of the questions of principle

<sup>37</sup> Ibid., p. 36.

<sup>38</sup> Noguee, *Soviet Policy*, p. 88.

<sup>39</sup> Lieberman, *The Scorpion and the Tarantula*, p. 391.

raised by the Soviet amendments on which no agreement had been reached are the question of what was required for strict international control of atomic energy, whether international control, including the prohibition of atomic weapons, was to be established by one treaty or several and in the latter case, the question of priorities, or the question of the right of the proposed Authority to conduct research in atomic weapons. As was the case with the first report of the UNAEC, the second report had been approved by 10 members of the Commission, but this time only Poland had abstained, while the Soviet Union had registered opposition.

Because of more pressing matters on its agenda, like the Palestine question or the India-Pakistan question, the Security Council decided not to consider the second report of the UNAEC. Deliberations continued in the latter institution through the remainder of 1947 and the spring of 1948. These discussions prompted the UNAEC third report to conclude that an impasse had been reached, and to request that UNAEC negotiations be suspended. A resolution for Security Council approval of all the reports of the UNAEC was vetoed by the Soviet Union in the summer of 1948; in the fall, General Assembly consideration of the question of atomic energy control resulted in a 40-6-4 approval of the majority plan, but the value of this non-binding resolution lay in propaganda more than in support for successful collaboration. Further negotiations in the UNAEC, which were continued at the insistence of the General Assembly, rapidly deteriorated, and by November 1949, the General Assembly agreed to suspend the work of the UNAEC.

#### IV. ISSUES IN THE INTERPLAY BETWEEN DIPLOMACY AND NUCLEAR TECHNOLOGY

Identification of a number of basic issues prominent in the U.S. policymaking process and in the negotiations will help to clarify the way in which technological and diplomatic factors interacted during the formulation and negotiation of the Baruch proposals. These basic issues will be explored to show this interaction, and also how it affected the outcome of each issue. Each issue will be examined in this manner, first in the course of the U.S. policymaking process and then in the international negotiations. Special attention will be given to the U.S. proposals as finally presented, the Soviet reaction to them, and the outcome of the negotiations.

Broadly, these issues all dealt with the interlocking concerns of national power, human safety, secrecy of atomic technology, privacy of the Soviet Union, and the potential utility of peaceful atomic energy. Three broad issues emerged: (1) the form of control, that is, international ownership and management versus inspection; (2) transitional stages for the establishment of international control, involving transfer of control of information and nuclear production facilities from the United States to the international authority; and (3) the question of sanctions and the veto.

##### *Significance of Technological Factors for U.S. Policy*

Before these issues are discussed in detail, it might be helpful to note a number of general factors of technology and diplomacy which may have influenced U.S. policy and the outcome of the negotiations.

Foremost among the technological considerations was the U.S. monopoly over atomic weapons. The very nature of scientific inquiry made it axiomatic that the U.S. monopoly was transitory. Acceptance of this factor was a major political motivation for U.S. efforts toward international control. Nevertheless, the question arose as to how the United States could prevent a premature end to its monopoly and thereby avoid endangering either its own security or world security while an international system of control was being established. U.S. policy on this question would influence the general political atmosphere surrounding the effort to establish international control.

Among the possible measures which the United States could use to protect itself and the world from proliferation of atomic weapons until an international system could be set up was stringent control of the dissemination of information which would contribute to development of military applications of atomic energy. This idea led to a persistent popular misconception regarding the "secret" of the atomic bomb:

Many of the semantic difficulties dated from the first months of public knowledge of the wartime program. The "secret" of the atomic bomb was a case in point. After more than two years of efforts to explain this term accurately, use of it still induced an almost automatic emotional response.

Polling questions which contained references to both "bomb secrets" and "international control" invariably brought fewer approvals of the control principle, the automatic reaction being to "keep the secrets."<sup>40</sup>

At the time of the December 1945 conference which resulted in the Moscow Declaration, Senator Arthur Vandenberg, Chairman of the Senate Foreign Relations Committee, and other members of Congress repeatedly sought and obtained assurances from the President that the United States would not release atomic energy information prior to the establishment of adequate safeguards. The protective attitude toward the U.S. "secrets" was heightened by the revelation in early 1946 of evidence of espionage in Canada involving the transmission of atomic energy information to the Soviet Union. These events served not only to reinforce the public attitude toward nuclear secrecy surrounding the bomb, but also to engender a growing mistrust in the United States of the Soviet Union.<sup>41</sup>

In general, the attitude of the United States toward the secret of the bomb may have had several effects on its policy and on other countries' conceptions of that policy. Mistrust of the Soviet Union, coupled with the idea that sole possession of the atomic weapon represented a "sacred trust"<sup>42</sup> in terms of U.S. responsibility for world security, may have acted as a motive to withhold as much information as possible, for as long as possible, until the international control system was secure. But a marked reluctance on the part of the United States to part with information or facilities may have encouraged critics of the U.S. proposals, especially in the Soviet Union, to conclude that the United States did not intend to relinquish its monopoly and eventually would exercise "atomic diplomacy."

The notion of devising methods to protect the secret of the bomb figured importantly in U.S. policy discussions on international control of atomic energy. However, considerations of this nature ran counter to a principle which might be deemed applicable to any field of scientific inquiry: that secrecy cannot long delay the independent acquisition of scientific and technological information. This principle had special force in the case of atomic energy, in light of the inherent importance of this information to other nations, especially a great power like the Soviet Union.

A related question which entered U.S. policy deliberations involved estimates of how long it would take the Soviet Union to develop its own atomic weapon without access to outside information. Such estimates would indicate how long the United States could expect to enjoy its preeminence in the field of atomic energy even if its efforts to maintain secrecy, before establishment of effective international control, should be entirely successful. Thus, the U.S. assessment of Soviet technological capabilities was a factor to be reckoned with in the U.S. diplomatic approach to the international negotiations.

<sup>40</sup> U.S. Department of State, *The International Control of Atomic Energy, Policy at the Crossroads*, Publication 3161 (Washington, D.C.: U.S. Government Printing Office, 1948), p. 27.

<sup>41</sup> Hewlett and Anderson, *History of the United States Atomic Energy Commission*, p. 501. The spy cases also had an effect on the congressional deliberations on domestic control of atomic energy and on the U.S. attitude toward international information exchange, e.g., wartime agreements with the British. *Ibid.*, p. 480.

<sup>42</sup> This phrase was used by President Truman to describe the U.S. role in relation to its monopoly on atomic weapons. State Department, *Growth of a Policy*, p. 117.

Opinions varied within the Administration as to the length of time necessary for the Soviet Union to develop an atomic weapon. As early as 1945, the question was raised in Administration circles. During a meeting of Stimson's Interim Committee, a memorandum was cited which reflected the estimate by Bush and Conant that it would be 3 to 4 years before the Soviets could develop an atomic weapon. General Groves' estimate is described as follows: "Taking a very low view of Russian ability, he considered 20 years a much likelier figure."<sup>43</sup> Conant called this figure "highly unsafe."

The Acheson-Lilienthal report noted the speculative nature of estimates of this kind. In order to assess a technological situation accurately, the report contended, it was necessary to have a knowledge of the progress of foreign development. Such knowledge, of course, was not then forthcoming. But on balance, the report seemed to minimize the possibility of an imminent acquisition of atomic weapons by other countries. The Consultants touched on this question insofar as it related to how much a rival effort would be accelerated by the release of U.S. information. Even with the release of purely theoretical information, according to the Consultants, "a major program, surely lasting many years, is required for the actual production of atomic weapons."<sup>44</sup> It might be inferred from this statement that the Consultants' view of rival efforts, *without* access to theoretical information, could hardly have been an imminent cause for alarm to U.S. policymakers.

One high Administration view, even more explicit regarding estimates of Russia's ability to develop its own bomb, was conveyed to the U.S. negotiating team. Hancock kept a record of a meeting which he attended between Byrnes and Baruch, which states:

Mr. Byrnes briefly reviewed his impression that the Russians don't know much about atomic energy or its use in bombs. Dr. Conant got no facts regarding it while he was in Russia and the assumption is that they know nothing.<sup>45</sup>

While it is difficult to appraise the extent to which these assessments of Soviet nuclear development influenced U.S. policy, one might infer from the course and outcome of the negotiations that these considerations had weight. Considering the fact that differing estimates were made regarding Soviet atomic capabilities, it is possible to note an example of one problem which can arise when diplomacy is dependent upon science and technology. Policymakers do not always receive a technological assessment to which all members of the scientific community agree. A wide divergence only complicates the diplomat's task. If, for example, there is no clear consensus that an imminent danger exists, the diplomat will probably tend to be guided by counsels of compromise rather than urgency. And perhaps he should be—but it must also be noted that the counsels of urgency could be right, and that in the present instance it was the conservative estimates of General Groves which turned out to be the furthest from the true situation.

An equally thorny political factor which would enter into the dis-

<sup>43</sup> Hewlett and Anderson, *History of the United States Atomic Energy Commission*, p. 354.

<sup>44</sup> State Department, "Acheson-Lilienthal Report," p. 51.

<sup>45</sup> Lieberman, *The Scorpion and the Tarantula*, p. 274. Hancock may have been referring to Conant's trip to Russia with Byrnes, for the meetings which resulted in the Moscow Declaration. *Ibid.*, pp. 106-107.

cussions was the secrecy shrouding Soviet activities. One source describes this phenomenon as follows:

Western ignorance about the real condition of Russia was deemed by the regime, quite logically from its point of view, as one of the greatest assets it had in its conduct of foreign relations. Access to the U.S.S.R. was never so difficult—i.e., virtually impossible—for a foreigner who was not a diplomat or Communist, travel throughout the country never so limited as between 1946 and 1954. Not even during the Great Purge of the 1930's were restrictions so all-encompassing. The fear which this restrictive behavior suggests cannot have been simply a concern over revelations about the police-state aspects of Soviet life. By 1947, only Communists, fellow travelers, and the most naive of Western liberals denied that aspect of Soviet reality. Much more dangerous was any revelation of Russian *weakness*, of the magnitude of the tasks of industrial reconstruction and rapid demobilization lying ahead of this still primitive society. A truer picture of Russia's strength and weaknesses might induce some new and unwelcome thinking in the State Department and the Pentagon.<sup>46</sup>

Just as U.S. secrecy surrounding the bomb presented problems for its policy and the negotiations, the secretive nature of the Soviet Union would have a serious effect on the efforts to reach agreement on some of the fundamental elements of control.

Soviet development of atomic energy had proceeded quite well until World War II.<sup>47</sup> In terms of the quality of research, the Soviet capability at that point has been estimated to have been on a par with that of the United States, and the Soviets were catching up in the field of equipment. As the extent of Soviet involvement in World War II increased, however, they apparently found it necessary to abandon their efforts. All available manpower and resources were directed to meet the German attacks, rather than toward the "calculated gamble" of research for a nuclear weapon, at least until the setback for the Germans at Stalingrad in 1943. Moreover, as one writer has asserted, "the Soviet military strategy of enormous masses of ground troops, backed by artillery and close air support was not conducive to a whole-hearted search for weapons useful to strategic aircraft."<sup>48</sup>

Nuclear research in the Soviet Union was resumed in 1944, but a blackout was imposed on information at that time. It has been theorized that the first Soviet nuclear reactor was in operation by late 1947. This occurrence was considered a turning point in the Soviet efforts, a point which was reached less than two years after the opening of the negotiations for international control of atomic energy. It was only a matter of time before the Soviet research efforts succeeded, as evidenced by the explosion of its first nuclear device in 1949.

The contribution of Soviet espionage activities in the United States to progress in the field of atomic energy is hard to assess. One writer

<sup>46</sup> Adam B. Ulam, *The Rivals. America and Russia Since World War II*. (New York: Viking Press, 1971), pp. 106-107.

<sup>47</sup> The following discussion is based on Kenneth Whiting, "Post-War Strategy," in Asher Lee, ed. *The Soviet Air and Rocket Forces*. (New York: Praeger, 1959), pp. 91-95.

<sup>48</sup> *Ibid.*, p. 92.

has attempted to put this question in perspective when he comments on this possibility as follows:

We still do not know how much the relatively short gap between the first American and the first Russian explosion was due to successes in Soviet espionage, and how much it was due simply to native Russian capability. At the time it seemed to many of us that espionage must have been far and away the main reason they were able to accomplish the job so quickly, especially after the devastation that had been wreaked on them by World War II. Having since seen some excellent Russian technological progress in other fields, we are no longer quite so sure that this was the case. We should note, furthermore, that it is always easier to do something a second time, even if the only thing known from the first time is that it can be done.<sup>49</sup>

All things considered, an awareness of the progress of Soviet nuclear technology may contribute to an understanding in retrospect of the Soviet perceptions and attitudes during the negotiations of the UNAEC.

*The Form and Purposes of International Control*

The first question which arose in connection with the atomic energy policy formulation in 1947 was whether the general form of control should depend primarily on a system of international ownership and management, or on a system which left atomic energy development in national hands and relied on inspection to assure compliance with an agreement not to develop atomic energy for military purposes. Few specifics regarding the substantive aspects of this control issue were offered in the early international political actions on the subject. The resolution which established the UNAEC simply called on the proposed Commission to make proposals for "effective safeguards" to insure compliance with the control arrangement. Although it mentioned inspection as one type of safeguard, it offered no commitment to a particular method.

PROPOSALS OF THE ACHESON-LILIENTHAL REPORT

*The Board of Consultants' position against inspection:* The concept of inspection was distasteful to the members of the Board of Consultants. The Board saw it as inherent in the leading alternative to their own proposals: to leave atomic energy development in the hands of individual nations while prohibiting its development for military purposes would require inspection of national activities. Thus, inspection would be the sole means of verification of the control system, an arrangement which the Consultants opposed.

The Board's position, as expressed in the Acheson-Lilienthal report, was not based solely on technological considerations; it included "the inseparable political, social, and organizational problems involved in enforcing agreements between nations, each free to develop atomic energy, but only pledged not to use it for bombs."<sup>50</sup> Nevertheless, the argument against inspection in the report originated with the techno-

<sup>49</sup> Herbert York, *Race to Oblivion: A Participant's View of the Arms Race*. (New York: Simon & Schuster, 1971), pp. 34-35.

<sup>50</sup> State Department, "Acheson-Lilienthal report", p. 4.

logical premise that the processes associated with the development of atomic energy, whether for military or peaceful purposes, "are in much of their course interchangeable and interdependent." Because of this factor, it was considered necessary under a control arrangement to monitor each stage in the process of developing atomic energy, from raw materials to finished product, to insure that the materials were not diverted at some point in the process to weapons development by an individual nation. Such a comprehensive inspection system would take a great number of inspectors; moreover, the inspectors would be called upon to determine intent behind an operation associated with atomic energy development. The Consultants asserted that "at no single point can external control of an operation be sufficiently reliable to be an adequate sole safeguard."<sup>51</sup>

Another technological argument against inspection concerned the need for technical expertise in the staff which monitored atomic energy activities. To determine the existence of violations, staff members of an inspectorate would have to be highly trained in the field of atomic energy development. Moreover, the organization would have to be involved in research and development activities to keep abreast or ahead of advanced and changing developments, in a field which is "essentially a living art." Otherwise, would-be violators might try to exploit breakthroughs if they discovered them first. According to the Board of Consultants, an inspection system would "inevitably be slow to take into account changes in the science and technology of the field."<sup>52</sup>

The remainder of the remarks against inspection in the Acheson-Lilienthal report seem to be derived from the "political, social, and organizational problems" of a control system, rather than from the technological requirements. The Consultants asserted that an inspection system having a generally policelike character, would be deemed negative and suppressive. This quality would have a number of ill effects on the control system and its personnel. First, it would be difficult to attract highly qualified personnel in the field of atomic energy to an inspection team having this character, and the team itself would encounter problems in morale. Second, because inspection of facilities would require a large number of inspectors, the presence of many foreigners in participating countries would intrude excessively into national activities, challenge the good faith of the nations, and provide a likely source of tension and friction. On this particular point, the Consultants declared that this arrangement would be "as obnoxious to Americans as to any others."<sup>53</sup> Finally, the Consultants contended, under a system which entrusted atomic energy development to individual nations, "suspicion by one nation of the good faith of another and the fear engendered thereby are themselves strong incentives for the first to embark on secret illicit operations [and] any system based on outlawing the purely military development of atomic energy and relying solely on inspection for enforcement would at the outset be surrounded by conditions which would destroy the system."<sup>54</sup> Indeed, a basic source of the problem associated with inspection, according to the

<sup>51</sup> Ibid., p. 6.

<sup>52</sup> Ibid.

<sup>53</sup> Ibid., p. 7.

<sup>54</sup> Ibid., p. 8.

Board, was the national rivalries which would result as countries engaged in atomic energy development :

National rivalries in the development of atomic energy readily convertible to destructive purposes are the heart of the difficulty. So long as intrinsically dangerous activities may be carried on by nations, rivalries are inevitable and fears are engendered that place so great a pressure upon a system of international enforcement by police methods that no degree of ingenuity or technical competence could possibly hope to cope with them.<sup>55</sup>

*International ownership and operation of dangerous activities:* Awareness of the political problems caused by inescapable national rivalries provided the main basis for the Consultants' proposals. The Consultants sought to eliminate these rivalries by internationalizing certain activities which might become a source of competition among nations. As was the case with the Consultants' views of inspection, they looked to both technological and political considerations to support their ideas for assigning certain activities to an international Authority.

The practicability of such an international Authority, in their view, would be derived from certain technological characteristics of atomic energy development. An inherent technological difficulty of an inspection system was how to determine the intent behind an activity in atomic energy development, that is, whether it was designed for peaceful or military purposes.

The Consultants asserted that specific categories of activity could be identified which, if undertaken by an individual nation, clearly would constitute a violation of the control system; such activities should be assigned to an international Authority. This arrangement would eliminate the need to determine intent behind a national activity in the atomic energy field. This concept was developed to the extent that the Board named in broad terms certain "safe" and "dangerous" activities. They warned, however, that these categories would have to be subject to constant reevaluation and revision in light of potential advances in atomic energy.

One example of how internationalization would function concerned the raw materials needed for atomic weapons; namely, ores of uranium and possibly thorium.<sup>56</sup> The existing technical knowledge at that time supported the conclusion that these materials were the only source of nuclear fuel materials<sup>57</sup> which could energize nuclear reactors for use either to produce fissionable materials for nuclear explosives, or to generate electricity. The practical problems posed by attempting to monitor the use of these raw materials were considered "most difficult." But management of actual mining operations by an international Authority would provide assurance that it could account for all sources

<sup>55</sup> Ibid., p. 5.

<sup>56</sup> The role of thorium in atomic energy illustrates the difficulty imposed by secrecy. The fact was still "classified" in 1946, that the addition of slow neutrons to thorium converted it into U<sup>233</sup>, which was fissionable. Nevertheless the Acheson-Lilienthal report proposed that its presence in a nuclear reactor should be prohibited without saying why.

<sup>57</sup> Uranium ores could provide the raw material for production of the fissionable isotope uranium-235, and also for the manufacture of plutonium by the exposure of uranium-238 to neutrons within a nuclear reactor. Uranium-235 and plutonium could be used for nuclear weapons.

of raw materials. Moreover, if possession of raw materials should become the exclusive prerogative of the international Authority, any attempt on the part of an individual nation to exercise control over raw materials would represent a clear violation. Mere possession, irrespective of use or intent, would be illegal. An added advantage owing to technological factors was that this particular violation would occur early enough in the development process to allow other nations to take appropriate action to prevent national production of atomic weapons. Another advantage created by technological circumstances was that uranium and thorium occurred under special geological conditions which reduced the task of controlling the raw materials to "manageable proportions," a characteristic of a control system which the Consultants considered essential to effective safeguards. Moreover, the Consultants concluded that enough knowledge had been acquired to indicate that this principle regarding raw materials (as well as others) was not likely to be altered significantly by further scientific discoveries.<sup>58</sup>

A similar case could be made for the plutonium-producing atomic reactor, a design which produces material usable for either atomic weapons or power. By granting responsibility for building and operating such reactors solely to an international Authority, an attempt by a country to usurp this activity would represent an unambiguous violation. Determination of intent for the use of the product of the reactors would not be necessary.

Aside from the technological concepts which were considered to justify international operation of a number of specified activities, the report commented on another quality of such an approach which would make it advantageous to a secure system of safeguards. The activities which the Consultants contemplated turning over to an international Authority were also considered those most likely to foster rivalry among nations. Removing these from national hands would greatly reduce, if not eliminate competition among nations in atomic energy development, thereby enhancing the security of nations under the control system.

Another advantage of internationalization was illustrated by the proposal to give the Authority the function of development and research in the field of atomic energy. This function would be aided by the fact that the Authority would conduct the principal processes of atomic energy development. Both practical and political concepts played a role in establishing the report's position on this point. In the opinion of the Board, the control organization would have to stay in the forefront of knowledge in the field of atomic energy to maintain awareness of discoveries which could have a potential for violation of a control agreement. Thus a research and development function for the international agency would enhance the efficiency of the control organization in detecting violations. An additional reason for assigning this function to the international Authority was based partly on the technological prospect that in the foreseeable future, atomic energy could be used substantially in a beneficial way. This function, it was suggested, would attract and hold the skilled, imaginative staff so vital to the successful operation of a control authority. But the prin-

<sup>58</sup> Indeed, one section of the report, "The Adequacy of Present Scientific Knowledge," is devoted to explaining that there were basic scientific principles which could be expected to remain unchanged, and would therefore provide a reasonably sound basis for devising a control system.

principles to support this idea are expressed in terms which hardly could be considered scientific or technological:

While suppression is not possible where we are dealing with the quest for knowledge, this thirst to know (that cannot be "policed" out of existence) can be used, affirmatively, in the design and building of an effective system of safeguards.

Human history shows that any effort to confine the inquiring human mind \* \* \* is doomed to failure. \* \* \* Like the jiu jitsu wrestler whose skill consists in making his opponent disable himself with his own thrusts, the designers of a system of safeguards for security should and can utilize for enforcement measures that driving force toward knowledge that is part of man's very nature.<sup>59</sup>

*Retention of "safe" national activities:* The Consultants recognized that a complete monopoly of atomic energy activities by an international Authority would not be acceptable politically or economically. Therefore, based on the existing technical knowledge, certain types of activities were classified as "safe" and would be allowed to remain in national hands. The judgment that such activities could be retained safely on a national level relied primarily on a technological assumption that "denaturing" of atomic fuel was possible. The Consultants asserted that fissionable materials could be contaminated in such a way that they would "not readily lend themselves to the making of atomic explosives, but they can still be used with no essential loss of effectiveness for the peaceful applications of atomic energy."<sup>60</sup> Reversal of the denaturing process, to make the materials suitable for weapons production, was thought to involve a difficult and easily detectable effort.

Using denatured materials, the Consultants declared, nations could pursue a number of legitimate activities, such as the operation of research reactors (kept below a certain power level), construction and operation of reactors to produce radioactive materials, and construction and operation of reactors to generate electric power. For these activities to be entrusted to national hands, designs would have to be devised for reactors which could not be diverted to dangerous use. The denatured materials and operation of these activities would have to be licensed or controlled in some way by the international Authority. In discussing the Authority's licensing functions under which national activities would operate, the Consultants raised the following questions:

How shall control be exercised lightly enough to assure the free play of national and private enterprise without risk to security? How shall facilities and materials available for national and private exploitation be allocated and at what cost? How may safe activities, assigned to national hands, be withdrawn if new discoveries show them to be dangerous?<sup>61</sup>

The entire discussion of national activities in the Acheson-Lilienthal report would seem to imply that the Consultants envisioned and supported rather active national programs in atomic energy development. These activities would be of a sufficient scale and variety to encourage

<sup>59</sup> Ibid., p. 15.

<sup>60</sup> Ibid., p. 23.

<sup>61</sup> Ibid., p. 35.

development and competition among nations and private industry. Moreover, active national participation in atomic energy development, they hoped, would "help correct any tendencies that might otherwise develop toward bureaucratic inbreeding and over-centralization, and aid in providing healthy, expanding national and private developments in atomic energy."<sup>62</sup>

Although the Board contended that the technological factors associated with denatured materials lent credence to their expectations for national activities, they warned that:

Although as the art now stands denatured materials are unsuitable for bomb manufacture, developments which do not appear to be in principle impossible might alter the situation.<sup>63</sup>

During Administration deliberations before the opening of the UNAEC, Baruch said denaturing had inspired false hopes, and in his initial address to the UNAEC he stated that "Denaturing seems to have been overestimated by the public as a safety measure."<sup>64</sup> Both the first and second reports of the UNAEC granted the possibility of permitting national activity using denaturing materials only if the denaturing process proved technologically feasible. This skepticism of the reliability of denaturing, as well as Soviet opposition to proposals for international ownership and inspection, appear to have been responsible for the fact that the proposed reliance on denaturing did not become a major issue in the negotiations. In retrospect, the U.S. position on denaturing appears to have been based upon a technology forecast—the assumption of a principle which today, 25 years later, has remained undemonstrated in practice. This fact points up one occasion when forecasts by scientific advisors would not have met the needs of the diplomats.

*Inspection provisions in the report:* Despite the number of negative aspects of inspection, the Board members pointed out that the need for it could not be eliminated entirely. However, the overall plan they recommended was aimed at making inspection "so limited and so simplified that it would be practical and could aid in accomplishing the purposes of security."<sup>65</sup> The requirements for inspection are discussed in detail among the functions of the proposed international Authority.

The discussion of the issue tended to emphasize that inspection could be beneficial. Because inspectors would also be engaged in research on atomic energy,<sup>66</sup> their "policing" of national facilities (for example, those using denatured materials) would offer opportunities to provide helpful guidance and advice to the operators of those facilities, making inspection less objectionable. The only "systematic or large-scale inspection activities" contemplated for the proposed Authority were those which would be used to take control over raw materials.<sup>67</sup> In addition, the report recognized that some procedure would have to be devised for the investigation of suspected clandestine dangerous activ-

<sup>62</sup> Ibid., p. 22.

<sup>63</sup> Ibid., p. 23.

<sup>64</sup> Baruch, "Proposals for an International Atomic Development Authority," p. 1061.

<sup>65</sup> State Department, "Acheson-Lillenthal report," p. 5.

<sup>66</sup> The inspectors of the International Atomic Energy Agency (IAEA) today do not reflect this concept of the scientist-inspector. Rather, present-day inspectors are precisely that, professional men in the complicated and uncertain art of nuclear materials.

<sup>67</sup> Contemporary inspection is focused more on processing, fabrication, use, and reprocessing of nuclear fuel materials than upon mining and refining.

ities, which might involve the International Court of Justice or some similar body, to determine if enough evidence of clandestine activity existed to warrant investigation.<sup>68</sup>

The report stressed that operation of dangerous activities by the proposed international Authority could eliminate the need for determination of intent behind national or private facilities, and would thereby avoid the need for extensive and intrusive inspection. In addition, the following statement regarding some of the technical difficulties of engaging in clandestine activities seemed to minimize not only the need for inspection but also, perhaps, the possibility that evasions might be attempted:

It is true that a thoroughgoing inspection of all phases of the industry of a nation will in general be an unbearable burden; it is true that a calculated attempt at evasion may, by camouflage or by geographical location, make the specific detection of an illegal operation very much more difficult. But the total effort needed to carry through from the mine to the bomb, a surreptitious program of atomic armament on a scale sufficient to make it a threat or to make it a temptation to evasion, is so vast, and the number of separate difficult undertakings so hard to conceal, that the fact of this effort should be impossible to hide. The fact that it is the existence of the effort rather than a specific purpose or motive or plan which constitutes an evasion and an unmistakable danger signal is to our minds one of the great advantages of the proposals we have outlined.<sup>69</sup>

#### REACTIONS AMONG U.S. POLICYMAKERS TO THE PROPOSALS OF THE BOARD OF CONSULTANTS

When the Board originally presented its plan to Acheson's committee, both Conant and Groves voiced apprehension that the need for inspection had been minimized too much and that the terms which the Consultants used to characterize it were too negative. Conant considered it vital that there be freedom of access for inspectors. At one point McCloy raised the possibility that this plan might be one way "to alter Russia's closed society."<sup>70</sup> But Acheson discouraged the idea on the grounds that the basic political issues associated with the difficulties in United States-Soviet relations could not be resolved through the efforts to deal with the problem of international control of atomic energy. Although Lilienthal agreed readily to make changes appropriate to the views of Conant and Groves, the report's general tone on the issue of inspection remained negative.

Despite the fact that the Board had retained the idea of some national activity, significant forces at work in the policymaking process opposed extensive internationalization, for technical and other

<sup>68</sup> For a discussion of inspection, see State Department, "Acheson-Lilienthal Report", pp. 35-39.

<sup>69</sup> *Ibid.*, pp. 36-37. The Board seems to have given little thought to the possible emergence of an international black market in fissionable materials, an issue that is attracting considerable attention today as the United States and other governments push ahead with the development of breeder reactor technology, which can greatly increase the amount of fissionable material available for direct use in weapons manufacture. Today if a nation or other institutions can obtain nuclear materials on a black market, it is probable that such an instrumentality could fabricate small, inefficient, but still enormously destructive atom bombs.

<sup>70</sup> Hewlett and Anderson, *History of the United States Atomic Energy Commission*, p. 548.

reasons. The issue of ownership of raw materials is an apt example. Searls, the mining engineer on Baruch's delegation, did not share the Consultants' view regarding the manageability of all the sources of raw materials, and advised Baruch that the arrangement proposed in the Acheson-Lilienthal report would be difficult. His views were seconded by representatives of mining interests who sought out Baruch to argue against international ownership. One mining executive told Baruch "an international administration would upset wages, dissatisfy people, and, on account of the different nationals involved, present tremendous management difficulties."<sup>71</sup>

Another argument against international ownership was that it violated the rights of private enterprise. Hancock, of Baruch's group, contended that if uranium was the byproduct of mining operations which contributed significantly to a country's economy, international ownership would be unacceptable to that country. At one meeting, when Hancock expressed his preference for more inspection over ownership, Acheson pointed out that the Russians would not accept this arrangement as the predominant safeguard. Hancock disagreed, and the two men did not resolve the issue.<sup>72</sup> An alternative plan called for operation of nationally owned mines under "reasonable regulations" of the Authority or "a system of rigorous inspection and accounting procedures for the separation operations at mining locations throughout the world." Baruch's team was willing to support this position against international ownership.<sup>73</sup> When Baruch met with the Acheson and Lilienthal groups, he announced the delegation's preference for "some form of licensing of private mining operations" and suggested using the term "dominion" to describe the relationship between the international Authority and raw materials.<sup>74</sup> Apparently, the technological assertions which were advanced to support the Consultants' proposals for ownership of raw materials were insufficient for the United States to overcome traditional political and economic concepts of sovereignty and private ownership. The varying assertions by the qualified experts on the manageability of raw materials compounded the confusion surrounding the problem of atomic energy control. In retrospect, a more important factor was the discovery of uranium in the years following the negotiations in places where it was not anticipated in 1946.

#### TREND TOWARD CONTROL IN U.S. POLICY

As enunciated at the negotiations, the main thrust of U.S. policy on the general form of control shifted somewhat from the plan proposed in the Acheson-Lilienthal report. In describing the international Authority, Baruch's speech to the UNAEC offered a variety of specific methods of control over various phases of atomic energy development. Among the safeguards he proposed were "various forms of ownership, dominion, licenses, operation, inspection, research, and management."<sup>75</sup> While Baruch stated that these duties should interfere as little as possible with the internal affairs of the states involved, every phase of atomic energy development would be placed under the juris-

<sup>71</sup> Ibid., p. 563.

<sup>72</sup> Ibid., p. 569.

<sup>73</sup> Lieberman, *The Scorpion and the Tarantula*, p. 276.

<sup>74</sup> Ibid., p. 281.

<sup>75</sup> Baruch, "Proposals for an International Atomic Development Authority," p. 1060.

diction of the international Authority, in one way or another. One point on which the United States yielded to private and national interests concerned raw materials, which were proposed to be placed under the international Authority's "dominion"; specific forms of control over the natural deposits would depend on the geological, mining, refining, and economic circumstances of the various locations where they were found. While the second U.S. memorandum stated that the Authority should have such control as would insure "its complete and absolute ownership of all uranium and thorium produced," the proposal involved a control system imposed upon national mining and concentrating operations, rather than simply transferring these activities to the international Authority, as the Acheson-Lilienthal report had proposed.

It will be recalled that the Acheson-Lilienthal report displayed some enthusiasm for allowing national and private participation in certain areas of atomic energy development. But when Baruch presented the U.S. proposals to the UNAEC, the main concern over national activities was that they would be subject to licensing and inspection by the Authority. As noted above, he questioned the effectiveness of denaturing to prevent illegal diversion of activities in national hands. Moreover, Baruch stated that national activities should be subordinate to the international Authority and added that this represented "neither an endorsement nor a disapproval of the creation of national authorities."

In the brief discussion of inspection in Baruch's speech, he mentioned the advantages of the overall plan, which stressed international ownership, thus providing unambiguous evidence of violations and limiting inspection requirements. He also noted that those activities licensed by the Authority would be subject to inspection. His third point, however, which was to become a focus for Soviet opposition during the negotiations, was an insistence on freedom of access. He said: "Adequate ingress and egress for all qualified representatives of the Authority must be assured."<sup>76</sup> Less attention was given to the idea of linking the developmental function with inspection, as the Acheson-Lilienthal report had done.<sup>77</sup>

#### U.N. STALEMATE OVER CONTROL AND INSPECTION

*Soviet reaction to proposed internationalization:* Typical of the Soviet Union's reaction to the notion of international ownership was Gromyko's comment on the UNAEC's first report; he labelled the whole concept "thoroughly vicious and unacceptable," and added that international ownership and managerial control "would lead to interference by the control organ in the internal affairs and internal life of States and eventually would lead to arbitrary action by the control organ in the solution of such problems as fall completely within the domestic jurisdiction of a State."<sup>78</sup>

Soviet reaction to the requirements for inspection set forth by Baruch was unequivocal, as indicated by a press release which dis-

<sup>76</sup> Ibid., p. 1061.

<sup>77</sup> The first U.S. memorandum touched on the issue of inspection in a manner similar to that of Baruch's speech. The second memorandum expanded on the idea by elaborating the details of inspection, i.e., adequate provision would have to be made for inspectors in terms of communication and transportation, as well as unhindered access to the facilities in question.

<sup>78</sup> State Department, *Policy at the Crossroads*, p. 80.

cussed a speech by Gromyko to a committee of the UNAEC in July 1946:

Mr. Gromyko said that the proposed inspection is not reconcilable with the principle of sovereignty of states. "No inspection as such can guarantee peace and security." And, he added, "This idea of inspection is greatly exaggerated in importance. It is a too superficial understanding of the problem of control." The Soviet Delegate repeated that inspection has assumed undue importance in the course of the discussions and said that the only real underlying method of control is "by the cooperation of the United Nations."<sup>79</sup>

The origin for this opposition appears to have been in the precepts associated with the political principle of national sovereignty. One U.S. response to this argument was made by Baruch in a speech before Freedom House in October 1946:

Every treaty involves some diminution of absolute national sovereignty, but nations enter into such treaties of their own free will and to their common advantage. Indeed, freedom to enter into such voluntary international arrangements is inherent in the very concept of national sovereignty.<sup>80</sup>

*Action by the UNAEC:* The first report of the UNAEC declared in its "Findings" that:

Ownership by the international control agency of mines and of ores still in the ground is not to be regarded as mandatory.<sup>81</sup>

Broad terms of reference were applied to dangerous activities, a category which seemed to include all aspects of the production of fissionable materials:

\* \* \* Effective control of atomic energy depends upon effective control of the production and use of uranium, thorium, and their fissionable derivatives. Appropriate mechanisms of control to prevent their unauthorized diversion or clandestine production and use and to reduce the dangers of seizure—including one or more of the following types of safeguards: accounting, inspection, supervision, management, and licensing—must be applied through the various stages of the processes from the time the uranium and thorium ores are severed from the ground to the time they become nuclear fuel and are used.<sup>82</sup>

Looking back from the early 1970s, when most contemporary challenges to nuclear power focus on safety and environmental effects, it is interesting to note that these matters received scant attention by the United Nations in the 1940s.

The second report of the UNAEC elaborated on the general concept of ownership by the Agency and how it applied to source material and the operation of dangerous facilities, and thereby addressed itself to political problems inherent in such an arrangement. The report's dis-

<sup>79</sup> State Department, *Growth of a Policy*, p. 83.

<sup>80</sup> *Ibid.*, p. 91. He might, however, have added that the right of withdrawal is also inherent in national sovereignty.

<sup>81</sup> United Nations Atomic Energy Commission, "First Report of the Atomic Energy Commission to the Security Council, 31 December 1946," p. 16.

<sup>82</sup> *Ibid.*

cussion was premised on the assertion that it was not possible to maintain security by allowing nations or individuals to have proprietary rights over source materials, nuclear fuels, or dangerous facilities. It recognized the need to protect certain rights of individual nations and to guard against any abuse of power by the international Agency. Ownership by the Agency would be "in the sense of a trust exercised on behalf of signatory States jointly." While broad powers over the materials and facilities would be granted to the Agency as owner, many of these, especially those dealing with "rights of disposition," would be "very closely controlled by the terms of the treaty or convention." Certain arrangements, for example, the location of facilities within a country or compensation for source materials, would have to be determined through agreement with individual nations. Other activities would be executed by the Agency in accordance with the principles established by treaty for governing the Agency's rights and duties as "trustee."

Similarly, the report proposed that the treaty or convention determine principles respecting the geographic distribution of production facilities and stockpiles of materials suitable for weapons use; these principles would be such that no particular location would have a greater share of materials, and thus would avoid the potential for a military capability or military superiority. It was decided that the Agency could not be allowed to determine policy on this subject as decisions in this area affected world security.<sup>83</sup> Thus, the UNAEC envisioned that decisions on political considerations arising from the rights, duties, and limitations of international ownership would be agreed to before assumption by the Authority of the powers entrusted to it.

In additional sections of the second UNAEC report, these and other concepts were developed in considerable detail; specific proposals dealt with the mining of raw materials and with dangerous activities. Discussion of "dangerous activities" offered proposals on the refining of raw materials; the stockpiling, production, and distribution of nuclear fuels; and the design, construction, and operation of isotope separation plants and of nuclear reactors.

These later sections of the report contained several observations with regard to arrangements with individual nations which the Authority would have to make, some of which might have to be included in the treaty or convention establishing the Authority. The need for such arrangements was recognized, as certain activities of the Authority might affect the economy of a nation or might otherwise warrant compensation by the Authority. The report also listed the various forms of inspection and licensing activities and where they would be required. Although these proposals in the second UNAEC report were based primarily on technological considerations, they also involved political factors, as reflected in the prescription that:

Production facilities, facilities utilizing nuclear fuel, and stockpiles be distributed in such a way as to minimize the possibility that seizure could provide an aggressor with a military advantage.<sup>84</sup>

<sup>83</sup> United Nations Atomic Energy Commission. "The International Control of Atomic Energy. The Second Report \* \* \* to the Security Council." Sept. 11, 1947. Reproduced for the United Nations Mission to the United Nations. U.N. Document S/557, Mimeo (New York: United Nations, 1947), pp. 13-17.

<sup>84</sup> *Ibid.*, p. 38.

Despite the kind of attention to detail which might have been expected to ease Soviet fears, the Soviets continued to express adamant opposition to some of the fundamental features of the plan. This attitude may have lessened the value of the efforts by the UNAEC to formulate the finer points of the control system.

The third report of the UNAEC may have been commenting on the need for the acceptance of the general concept of international ownership, when it stated:

Only if traditional economic and political practices are adapted to the overriding requirements of international security, can these proposals be implemented. Traditional concepts of the economic exploitation of the resources of nature for private or national advantage would then be replaced in this field by a new pattern of co-operation in international relations.<sup>85</sup>

With regard to inspection, the first report of the UNAEC had stated that "only" through an "international system of control and inspection" can atomic energy be "freed from nationalistic rivalries."<sup>86</sup> It called for "a strong and comprehensive system of control and inspection." On the "freedom of access" issue, the UNAEC seemed to put its recommendations in even more specific terms than Baruch, when the report stated that the treaty or convention establishing the international Authority should contain provisions—

\* \* \* Affording the duly accredited representatives of the international control agency unimpeded rights of ingress, egress, and access for the performance of their inspections and other duties into, from, and within the territory of every participating nation, unhindered by national or local authorities.<sup>87</sup>

Committee Two's report, appended to the first UNAEC report, had referred to the need for inspection quite frequently in regard to a number of activities. The group defined inspection as follows:

2. *Inspection* means close and careful independent scrutiny of operations to detect possible evasions or violations of prescribed methods of operation. In addition to direct auditing measures as described above, inspection may include observation of points of ingress to and egress from an establishment or installation to ensure that materials and supplies are flowing in the prescribed manner, observation of the activities within the establishment or installation, and measures in the form of aerial or ground survey and otherwise to guard against clandestine activities. To be fully effective, the power of inspection may require that the operations be carried on in a specified manner in order to facilitate the inspection. In this event, inspection verges on supervision.<sup>88</sup>

The need for inspection was discussed in Committee Two's report, and during the negotiations, insofar as it related to examination of "declared" activities, i.e., those facilities operated by the proposed

<sup>85</sup> United Nations Atomic Energy Commission. *Official Records*. Third year. Special Supplement. "Third Report to the Security Council, May 17, 1948." (Lake Success, New York: August 1948) p. 4. (AEC/31/Rev. 1. June 27, 1948.)

<sup>86</sup> United Nations Atomic Energy Commission, "First Report of the Atomic Energy Commission to the Security Council, 31 December 1946," p. 16.

<sup>87</sup> *Ibid.*, pp. 18-19.

<sup>88</sup> *Ibid.*, p. 44.

Authority or by national or private management licensed by the Authority. Suspected clandestine activities seemed to present the most difficulties in the findings and recommendations of the UNAEC and in the negotiations themselves. Committee Two's report seemed to recognize that inspection for clandestine activities represented one of the more troublesome political problems to be dealt with in the negotiations. Moreover, it reflected a recognition of how certain inherent technological demands of atomic energy control were in conflict with traditional political requirements of states:

Like all problems in atomic energy, the detection of clandestine operations is greatly simplified by the technical facts of the field. Nevertheless, general and political considerations play a larger part in the effectiveness and acceptability of any system for the detection of clandestine operations than in most other parts of the problem. They will need most careful consideration when the functions, powers, and organization of the agency are defined. It will be here that the conflicts between the requirements of the international control agency on the one hand and considerations of national sovereignty and present practice on the other will have to be resolved.<sup>89</sup>

The second report of the UNAEC attempted to deal with the political problems associated with inspection in a section entitled "Rights of and Limitations on the International Agency in Relation to Inspections, Surveys, and Explorations." It offered 21 specific proposals on such subjects as procedural details of inspections, ground or aerial surveys, and the like. Six of these were devoted to proposals dealing with investigation of clandestine activities.<sup>90</sup> Many of these procedural proposals were made with the understanding that they should be incorporated in the treaty or convention establishing the Authority. The following concluding statement may serve as a general comment on the character of the inspection envisioned by the UNAEC in its second report:

In summary, the proposals contained in this chapter provide very extensive powers of inspection and search which enable the agency to visit any accessible place and provide appropriate procedures applicable in certain specified circumstances. It has to be recognized that, in addition to these proposed procedural requirements and limitations, the good sense, as well as the budget, of the agency will themselves be limitations on the exercise of powers given to the agency and that, by virtue of the prospective functions of the agency which have been proposed in previous chapters, the amount of inspection required and the attendant interferences will be much less than would be necessary under a control system which sought to depend on inspection alone.<sup>91</sup>

With regard to declared facilities, the Soviets would agree only to "periodic inspections," or to inspections "carried out at definite inter-

<sup>89</sup> *Ibid.*, p. 56.

<sup>90</sup> The main categories of these proposals were the following: (1) requirement of warrants or special consent; (2) granting of special consent; (3) resort to domestic or international court, body, or official; (4) domestic courts, bodies, or officials required to issue warrants upon showing of probable or reasonable cause; (5) international court, body, or official required to issue warrants upon showing of probable or reasonable cause; and (6) scope of warrants. Complete details of these proposals can be found in United Nations Atomic Energy Commission, "The International Control of Atomic Energy, The Second Report to the Security Council", pp. 54-55.

<sup>91</sup> *Ibid.*, p. 50.

vals," but opposed permanent stationing of inspectors in countries. Soviet proposals on this subject, though more detailed than others, were considered by the majority of the Commission as failing to provide

an adequate basis for the development \* \* \* of specific proposals for an effective system of international control of atomic energy.<sup>92</sup>

The U.S. interpretation of the Soviet proposals on inspection was that it was "concerned chiefly with bookkeeping and reports."<sup>93</sup> As far as investigation of clandestine activities was concerned, the Commission reported that in the "minority" (Soviet) position, "inspection as to clandestine or unreported facilities is virtually ignored."<sup>94</sup> As was the case with international ownership, the extent of agreement on details achieved by a considerable number of UNAEC members was nullified by Soviet opposition to the basic principles behind the proposals on inspection.

In commenting on the impasse in the negotiations, the third report of the UNAEC seemed to focus on how the inspection issue, and the agreed technological requirements of control, challenged national attitudes toward security, secrecy, and sovereignty. It said:

\* \* \* Secrecy in the field of atomic energy is not compatible with lasting international security. Cooperative development and complete dissemination of information alone promise to remove fears and suspicion that nations are conducting secret activities \* \* \*.

The majority of the Commission is fully aware of the impact of its plan on traditional prerogatives of national sovereignty. But in the face of the realities of the problem it sees no alternative to the voluntary sharing by nations of their sovereignty in this field to the extent required by its proposals. It finds no other solution which will meet the facts, prevent national rivalries in this most dangerous field, and fulfill the Commission's terms of reference.<sup>95</sup>

Moreover, the third report placed the issue in a larger perspective when it expressed, if perhaps too facilely, the hope that:

The new pattern of international co-operation and the new standards of openness in the dealings of one country with another that are indispensable in the field of atomic energy might, in practice, pave the way for international co-operation in broader fields, for the control of other weapons of mass destruction, and even for the elimination of war itself as an instrument of national policy.<sup>96</sup>

### *The Issue of Stages of Transition to International Control*

A second major problem for U.S. policy and for the negotiations involved the manner in which an international control Authority would assume its responsibilities, or the stages by which there would be a

<sup>92</sup> Proposals and Recommendations of the United Nations Atomic Energy Commission, Sec. 2, "Report and Recommendations of the Third Report of the United Nations Atomic Energy Commission, adopted May 17, 1948," pp. 77-78, as quoted in Bechhoefer, *Postwar Negotiations*, p. 66.

<sup>93</sup> State Department, *Policy at the Crossroads*, p. 137.

<sup>94</sup> U.S. Participation in the U.N., Report 1947, p. 103, as quoted in Bechhoefer, *Postwar Negotiations*, p. 66.

<sup>95</sup> United Nations Atomic Energy Commission, "Third Report to the Security Council," pp. 4-5.

<sup>96</sup> *Ibid.*, p. 5.

transition from the existing U.S. control of atomic energy to a system of international control. The issue of these transitional stages involved partly the practical steps by which the international Authority would arrive at its position of complete control over atomic energy, but it also concerned the underlying assumption that this transition would have to proceed in such a way that the control system would be made reliable before it could assume responsibility for the information and facilities associated with the dangerous uses of atomic energy.

Without jeopardizing its own military security or that of the other nations of the world, thereby fulfilling its responsibility as keeper of the "sacred trust" over atomic energy, the United States had to determine its policy regarding the sequence and timing of the transfer of information and facilities to an international Authority. For other countries, the issue of the transitional stages raised questions regarding whether and when the United States would relinquish its monopoly over atomic energy and thus give up what appeared to be a commanding military advantage. Thus, U.S. policy had to be framed to satisfy multiple and conflicting purposes. Important related questions for policymakers of the United States and other countries were, when would the United States stop its production of atomic bombs, and what would become of its stockpiles?

#### THE POLITICAL BASIS FOR PROCEEDING BY STAGES

The concept of stages for the release of information and transfer of facilities had its foundations in early U.S. policy on international control of atomic energy and in those international agreements which committed the United States to seek such control. Initial Administration pronouncements regarding atomic energy included assurances that the "secret" of weapons manufacture would not be released in the absence of international control. In his October 1945 message to Congress, which concentrated primarily on national control, President Truman, in speaking on the problem of international control, pledged that international discussions would "not be concerned with disclosures relating to the manufacturing processes leading to the production of the atomic bomb itself," and that they would "constitute an effort to work out arrangements covering the terms under which international collaboration and exchange of information might safely proceed."<sup>97</sup> Although the President did not specifically mention transitional stages, his comments indicate an effort to avoid any implication that the impending discussions might lead to dissemination of information on atomic energy, before control of its destructive uses had been achieved. As later developed in U.S. policy, this goal became one of the primary purposes for devising transitional stages.

The Three Nation Agreed Declaration of November 1945 offered an "exchange of fundamental scientific information \* \* \* for peaceful ends with any nation that will fully reciprocate," but added that much of the information on practical applications of atomic energy would become available "just as soon as effective enforceable safeguards

<sup>97</sup> Harry S. Truman, "Special Message to the Congress on Atomic Energy," October 3, 1945, *Public Papers of the President of the United States, 1945* (Washington, D.C.: U.S. Government Printing Office, 1961), p. 366.

against its use for destructive purposes can be devised.”<sup>98</sup> Moreover, the statement recommended that the proposed U.N. Commission proceed “by separate stages, the successful completion of each one of which will develop the necessary confidence of the world before the next stage is undertaken.”<sup>99</sup> The same phrase was incorporated in the Moscow Declaration and in the resolution which established the UNAEC. At the Moscow Conference, the provision that the work of the Commission should proceed by stages had been strongly supported by the United States; Russian agreement was obtained primarily in exchange for Western agreement to Soviet insistence on the close relationship of the Commission with the U.N. Security Council.<sup>100</sup>

The idea that the proposed Commission should proceed by stages may have made it appear to the United States that its participation in the proposed organization would involve the release of information on atomic weapons either for the purposes of negotiation or to set up the system of international control. Thus, even before taking part in the negotiations on the substantive issues of control the United States felt it necessary to seek assurance that atomic weapons information would be protected in the absence of international control, and this concern was carried over into the negotiations themselves, as it applied to the transition from U.S. to international control.

#### INSISTENCE BY ACHESON COMMITTEE ON STEP-BY-STEP APPROACH

*Origins of the discussion:* The idea of transitional stages in the Acheson-Lilienthal report originated in the attitude among the members of Acheson's committee that the security of the United States had to be protected before and during the transition to effective international control. Some committee members expressed concern lest information and facilities associated with manufacturing the atomic bomb be released by the United States before a reliable system of international control had been established. The Board of Consultants did not set out initially to devise such stages. They viewed their basic task as to conceive a “workable system of international control,” and tended to disregard devising the steps to achieve it. It was only at the insistence of the Acheson committee that the Board resigned itself to modifying its report to include a general discussion of stages. The finished form of the Acheson-Lilienthal report, however, avoided going into considerable detail, on the grounds that specific schedules would have to be negotiated in the UNAEC, and that decisions on the timing of the release of information and facilities by the United States should be left to the highest policymakers in the Government.

Although the political basis for the concept of stages had been established in the policy approved by the President, the Board of Consultants apparently preferred to omit explicit discussion of this subject, even though Conant had earlier mentioned to the Board the need for transitional stages.<sup>101</sup> In the Board's original report to Acheson's committee, the Consultants did not deal with the issue of transitional

<sup>98</sup> State Department, *Growth of a Policy*, p. 25.

<sup>99</sup> *Ibid.*

<sup>100</sup> Lieberman, *The Scorpion and the Tarantula*, p. 216.

<sup>101</sup> Hewlett and Anderson, *History of the United States Atomic Energy Commission*, p. 534.

stages beyond the assertion that a necessary first step would be a raw materials survey. This consideration was primarily an operational requisite of the international Authority. When the plan was submitted to the committee, Conant, Bush, and Groves were the principal exponents of the political and military arguments for determining the transitional stages for the release of information and transfer of material.

Bush based his position on the recognition that rapid demobilization of U.S. military manpower had resulted in a U.S. dependence on the atomic bomb as its primary source of military power, while the Soviet Union had retained its large armies. If the international control system should be established in one step, and the United States relinquished its monopoly, Bush argued, the Soviets would be left in a superior military position.

Acheson's comments on the stages centered on two considerations. First, while he granted that the plan should go into effect as quickly as possible, he appeared to envision the transitional period as one which would reveal whether other nations would adhere to a system of international control. Acheson's remarks have been described as follows: "As soon as the organization had completed the first transitional phase and everyone was 'playing pool,' it would turn to the next. If the first phase revealed bad faith, further progress was out of the question."<sup>102</sup> Acheson's second point was that the United States should be prepared for crises with the Soviet Union and that a variety of issues, whether connected with the plan or not, could sabotage the whole effort. Therefore, U.S. preeminence in the field of atomic energy should not be forfeited immediately, in the event that steps to set up the international Authority failed.

Moreover, support for the idea of stages was based on the committee's general view of the complete plan for international control. Both Acheson and Conant described the plan primarily as a "warning device" whereby the United States and other nations of the world would become aware when a country embarked on its own program to develop nuclear weapons, and could take preventive or punitive action. Given this attitude toward the fully operational control system, it is understandable that the committee should have sought to retain for the United States the highest degree of military preparedness in the event of a breakdown as the system was being established, while at the same time preventing other nations from developing their own nuclear weapons.

Committee members differed as to the extent to which a detailed schedule of transition could be specified. Bush suggested that the stages would have to be defined clearly enough to insure acceptability of the plan, perhaps on the grounds that such definition would serve to strengthen the confidence of other nations in U.S. intentions to relinquish its monopoly. He recognized, however, that the fine details could not be determined at that point, a task which rightly belonged to the American negotiator. This position was supported by Acheson. Throughout the deliberations between the Board and the committee, General Groves supported the idea of setting forth the most explicit stages possible, to show "where the American people would come out

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<sup>102</sup> Ibid., p. 548.

if someone suddenly doublecrossed them.”<sup>103</sup> It was finally agreed that the Board would add a section to its report to deal with stages, but only in a “speculative way.” The purpose of the new section was “to give the report the ring of reasonableness.”<sup>104</sup>

During the discussions with the committee, Lilienthal had questioned the group’s competence to set down the transitional stages. In a meeting following the presentation of their first report to the committee, the Board members were apprehensive about the idea, apparently because of its political implications. One source has described the meeting as follows:

All had serious misgivings about adding a section on stages. It was not that they had any illusions about Russia. They recognized that the shift to international control must come in orderly steps. But they considered it bad tactics to write in an implied distrust of other nations. Their report assumed the good faith of Russia. It permitted the concept of stages to evolve during the negotiations. It avoided giving the plan a made-in-America stamp that would prejudice others against it. Yet what could the consultants do? If they refused to write the fourth section, someone else would. Perhaps they ought to stick with the task and see it done well. Distinctly unhappy, fearing they were blighting the spirit of the work, they decided to undertake the revision.<sup>105</sup>

*Final version—some technological considerations:* In keeping with the concern expressed by Acheson’s committee, the main thrust of the discussion in the Acheson-Lilienthal report on transition to international control was the effect which the transition process would have on U.S. facilities and information, and thus on the status of U.S. military security. The report stated that two different kinds of schedules needed to be considered. One would include “indispensable requirements for the *adoption and the success of the plan itself*,” and these steps were “fixed by the plan itself.”<sup>106</sup> The second kind of schedules consisted of a number of options which were considered “compatible with the operability of the plan and *affecting primarily its acceptability* to the several nations.”<sup>107</sup> The task of choosing from these options involved the acceptance of the parties concerned. Therefore, it should be left to the international negotiations. In dealing with these two kinds of schedules, the report divided the nature of the releases by the United States into two categories: material and information.

The discussion of the release of fissionable materials cited the two kinds of schedules mentioned above. In discussing those material acquisitions by the Authority which were viewed as “fixed by the plan itself,” the report treated only the initial operations of the Authority. The first step, regarded as “an essential prerequisite for all further progress,” was for the Authority to obtain “cognizance and control over the raw materials situation.” Various other steps were listed regarding initial operations of the Authority, but none would affect U.S. weapons production facilities. The report left the determination

<sup>103</sup> Lieberman, *The Scorpion and the Tarantula*, p. 257.

<sup>104</sup> Hewlett and Anderson, *History of the United States Atomic Energy Commission*, p. 549.

<sup>105</sup> *Ibid.*, p. 547.

<sup>106</sup> State Department, “Acheson-Lilienthal report,” p. 45.

<sup>107</sup> *Ibid.*

of the schedules for the transfer of these facilities for later negotiation.

The same treatment was given to disclosures of information. Negotiators would need some kinds of information to gain an adequate understanding of atomic energy, and thus contribute to effective negotiation of control. In making a case for these disclosures, the report cited an earlier study of classified information, prepared by a group in the Manhattan project, which delineated various groups of information which could be released or which had to be retained. The Acheson-Lilienthal report noted that this earlier report had been able to identify certain categories of information which could be released in the absence of international control without jeopardizing national security. In appealing for the release of certain kinds of information, the Acheson-Lilienthal report pointed out that all of this information fell into releasable categories.<sup>108</sup>

The Acheson-Lilienthal report suggested that the timing and sequence of the release of more sensitive information would depend on the negotiated stages whereby the international Authority would assume its operations. Some of this information would be required to enable the international Authority to undertake its initial operations. Another portion, particularly that on atomic weapons, would not have to be released until such time as the Authority was allowed to pursue research in this field, presumably during some later stage of transition. The report did emphasize that when the Authority was prepared to take over an operation, the United States and other countries would be obliged to release to the Authority all information, practical and theoretical, pertinent to that activity. The report also added that in order to take over some activities, the Authority would have to carry on planning in advance, and that for these purposes, information might have to be released prior to actual operations by the Authority. In discussing the need to negotiate many of the schedules for the assumption of control by the international Authority, the consultants commented on the demands this practical requirement for information release placed on U.S. policy:

The extent to which special precautions need to be taken to preserve present American advantages must be importantly influenced by the character of the negotiation and by the earnestness which is manifested by the several nations in an attempt to solve the common problems of international control. These questions lie in the domain of highest national policy in international relations.<sup>109</sup>

The release of both fissionable material and atomic information was discussed in the report in relation to U.S. security; in both areas, the report declared that the position of the United States would continue

<sup>108</sup> The Acheson-Lilienthal report described the product of the Declassification Committee as follows: "It recommended against declassification at the present time of a very considerable body of technical, technological, industrial, and ordnance information, that is information bearing directly on the manufacture of weapons and the design and operation of production plants. But it recommended the prompt declassification of a large body of scientific fact and of technical information of non-critical nature and wide applicability. It expressed the view that the further declassification of critical items of basic theoretical knowledge would conduce, not only to the national welfare, but to the long-term national security as well—no doubt because of the damaging effect which continued secrecy in these matters would have on our own scientific and technical progress \* \* \*. It is important again to emphasize that the Declassification Committee's recommendation was aimed at furthering our own long-term national security in the absence of international measures." Ibid., pp. 53-54.

<sup>109</sup> Ibid., p. 49.

to be a favorable one during the stages of transition. As far as facilities were concerned during the transition, all operating facilities would be located in the United States; and if a breakdown in the control system occurred, this country would have the advantage. Similar assurances were given with regard to the release of information. As noted above, information necessary for release during the negotiations met the security requirements set down in the earlier study by the Manhattan District Group. Moreover, the report explained, the items of information it advocated were "of a theoretical and descriptive nature and have in large part to do with the constructive applications of atomic energy [and] involve almost nothing of know-how."<sup>110</sup> The report contended that a major source of U.S. superiority in atomic energy rested in the actual experience of working with the facilities.

Thus, the Acheson-Lilienthal report relied in part on certain technological considerations to meet some of the political demands associated with the transfer of U.S. information or facilities. (One example is the assertion that selective release of technical information would not jeopardize U.S. security.) At the same time, however, the Consultants pointed out that many political decisions would have to be made in order to determine U.S. policy on the arrangements for the transition to international control. These decisions would be governed partly by the general trend of the negotiations, but would have to define the circumstances under which the United States was willing to relinquish those atomic energy facilities associated with its destructive applications and which were then viewed as temporarily the exclusive property of the United States. It is interesting to note that on this latter point, the letter of transmittal of the report to Secretary Byrnes, written by Acheson, discusses the stages at length, and calls for further study and decisions to support U.S. policy on transitional stages. Indeed, the letter even comments on the question of U.S. production of bombs, but does not take a position:

The development of detailed proposals for such scheduling will require further study and much technical competence and staff. It will be guided, of course, by basic decisions of high policy. One of these decisions will be for what period of time the United States will continue the manufacture of bombs. The plan does not require that the United States shall discontinue such manufacture either upon the proposal of the plan or upon the inauguration of the international agency. At some stage in the development of the plan this is required. But neither the plan nor our transmittal of it should be construed as meaning that this should or should not be done at the outset or at any specific time. That decision, whenever made, will involve considerations of the highest policy affecting our security, and must be made by our Government under its constitutional processes and in the light of all the facts of the world situation.<sup>111</sup>

#### INCONCLUSIVE TREATMENT OF THE TRANSITION ISSUE BY UNAEC

The U.S. policy on stages, as enunciated in Baruch's speech and in the memoranda which elaborated the U.S. position, did not develop

<sup>110</sup> *Ibid.*, p. 52.

<sup>111</sup> *Ibid.*, p. vi.

the concept beyond the level of detail contained in the Acheson-Lilienthal report. Indeed, very little was said regarding the relationship between the need for stages and U.S. security. In his remarks to the opening session of the UNAEC, Baruch mentioned stages only in regard to what would seem to be a procedural matter. He merely asserted that full control of atomic energy would "have to come into effect in successive stages," and that the transition should be set forth in the charter creating the Authority. Baruch recalled the language of the resolution creating the UNAEC as the basis for this provision.

Baruch did mention the U.S. role during the transitional stages, with regard to the release of both information and facilities, in terms which obviously offered few, if any, immediate concessions on the part of the United States. As far as information was concerned, Baruch outlined basically the procedure recommended in the Acheson-Lilienthal report, stating that only the information necessary to an understanding of atomic energy in the negotiations would be revealed by the United States until a successful conclusion was reached. Further disclosures would depend "in the interests of all, upon the effective ratification of the treaty," and would be carried out when the international Authority was prepared to assume certain functions. In his comments on U.S. facilities, he said that, "The United States was prepared to yield, to the extent required by each stage, national control of activities in this field to the Authority."<sup>112</sup>

The first U.S. memorandum expanded somewhat on Baruch's statement that the charter establishing the international Authority would specify the sequence and timing of the transition from the existing conditions to international control. Besides citing this requirement, the memo stated that the charter also should specify "the time when and the conditions under which the national and private possession, manufacture, and use of atomic weapons shall be outlawed."<sup>113</sup> Nevertheless, U.S. policy on the specific question of the timing for the disposal of existing weapons, a major question during the negotiations, was not mentioned. The second U.S. memorandum treated the question of transitional stages in a similar manner and did not provide any additional elaboration of the U.S. position, particularly concerning its own contributions during the transitional process.

Soviet policy on the question of stages was concerned primarily with the timing of the destruction of existing atomic weapons. It called for the establishment of international control following an agreement on the prohibition and destruction of atomic weapons. This sequence was never accepted by the majority during the negotiations:

While it is generally agreed that atomic weapons must be eliminated from national armaments, the majority have concluded that such elimination should come at that stage in the development of the international control system which would clearly signify to the world that the safeguards then in operation provided security for all participating states.<sup>114</sup>

Indeed, the Soviet Union itself recognized that there could be no guarantee that a second agreement establishing a control system would be

<sup>112</sup> State Department, *Growth of a Policy*, p. 146.

<sup>113</sup> *Ibid.*, p. 149.

<sup>114</sup> U.S. Participation in the U.N., Report 1947, p. 103, as quoted in Bechhoefer, *Post-war Negotiations*, p. 68.

concluded following conclusion of an agreement to prohibit and destroy atomic weapons.<sup>115</sup> Apparently, Soviet skepticism regarding the sincerity of U.S. pledges to destroy its bombs after the institution of international control contributed to the persistence of the Soviets in standing by their own proposals. Probably they saw advantage also in delay. It seems a strong probability, moreover, that the progress of their own development of atomic energy may have reinforced the determination of the Soviets to maintain their position. (The Soviet negotiators may not have been aware of that progress, but those from whom they received their policy directives presumably were fully informed.)

In regard to negotiation of the transitional stages, the issue was probably reduced to the question of when the United States would relinquish its monopoly over atomic energy, or more specifically, its bombs and the facilities for producing them. The Soviets asked what assurance there was that destruction actually would be carried out. During the negotiations, U.S. policy on this particular question was not defined beyond the pledge that destruction of existing stockpiles would take place when effective safeguards had been established. Efforts by the UNAEC to settle this question in more precise terms were unable to reach an agreement satisfactory to the Soviets.

The question of U.S. cessation of bomb production in relation to international control had been raised during the deliberations which resulted in the Acheson-Lilienthal report. Despite Acheson's assertion in the letter of transmittal that the report had not taken a position on the timing for a halt of U.S. weapons manufacture, the treatment of the issue in the report has been interpreted as follows:

\* \* \* the report took no definite position, implying therefore, that atomic weapons would continue to be built. Bomb-making would have to stop sometime, but that was a question for the President to determine consistent with constitutional processes and in the light of the world situation.<sup>116</sup>

In a speech before Freedom House in October 1946, Baruch pledged the intention of the United States to destroy its bombs "if the world would join in a pact to insure the world's security from atomic warfare." His comments on destroying U.S. weapons prior to establishment of the system posed the question:

Why should America alone be asked to make sacrifices by way of unilateral disarmament in the cause of good will? If equality of sacrifice be needed then each should participate.<sup>117</sup>

Truman himself had written to Baruch the previous July:

We should not under any circumstances throw away our gun until we are sure the rest of the world can't arm against us.<sup>118</sup>

In discussing the negotiations, Bechhoefer describes this question as "perhaps the most fundamental divergence between the Soviet position and that of the West." To Soviet questions on when bombs would be eliminated, the U.S. response was that the majority had concluded

<sup>115</sup> Ibid., p. 71.

<sup>116</sup> Lieberman, *The Scorpion and the Tarantula*, p. 258.

<sup>117</sup> State Department, *Growth of a Policy*, p. 90.

<sup>118</sup> Harry S. Truman, *Memoirs*, vol. 2. *Years of Trial and Hope*. (Garden City, N.Y.: Doubleday, 1956), p. 11.

that weapons should be eliminated "at that stage in the development of the international control system which would clearly signify to the world that the safeguards then in operation provided security for all participating States."<sup>119</sup>

Bechhoefer cites one discussion during the second year of the negotiations which illustrates the "indecisive nature" of the negotiations on the question of stages. The Soviet Union had proposed an amendment to the first report which simply called for destruction of manufactured and unfinished weapons. The first UNAEC report had proposed disposal of bombs, an expression which meant the elimination of the bomb mechanism and the peaceful use of the nuclear fuel from the dismantled weapons. The Soviet amendment had omitted any provision for use of the nuclear fuel, which posed the real danger following destruction of the bomb mechanism, although they agreed that the fuel should not be destroyed. During discussion of the amendment, the U.S. representative raised the point that the real issue was not destruction of the weapons but control of the nuclear fuel from dismantled weapons. In response, the Soviet representative insisted that the issue of control could not be discussed apart from destruction of weapons. Attempts to settle this question in the form of a resolution were fruitless, when the group could not even agree on a definition of the term "destruction." References to the term could not be separated from the issue of stages, which comprised the basic source of disagreement between the positions expressed by the United States and the Soviet Union.<sup>120</sup>

In the face of this impasse, a section on the majority plan for control in the third report of the UNAEC included the following statement regarding stages, which had been retained verbatim from the recommendations in the first report:

The treaty should embrace the entire programme for putting the international system of control into effect and should provide a schedule for the completion of the transitional process over a period of time, step by step, in an orderly and agreed sequence leading to the full and effective establishment of international control of atomic energy. In order that the transition may be accomplished as rapidly as possible, and with safety and equity to all, the United Nations Atomic Energy Commission should supervise the transitional process, as prescribed in the treaty, and should be empowered to determine when a particular stage or stages have been completed and subsequent ones are to commence.<sup>121</sup>

The final report recognized that more details would be desirable, but stated that it would serve no useful purpose to attempt to elaborate on this and other questions "until agreement on the basic principles of control has been reached."<sup>122</sup>

Thus, it would appear that efforts to determine the sequence and timing of the assumption of control by the international Authority may have originated in the negotiations simply as a question of the pro-

<sup>119</sup> U.S. Participation in the U.N., report 1947, p. 103 as quoted in Bechhoefer, *Postwar Negotiations*, p. 74.

<sup>120</sup> For a detailed discussion of this particular point, see *ibid.*, pp. 72-74.

<sup>121</sup> United Nations Atomic Energy Commission, "Third Report to the Security Council", p. 17-18.

<sup>122</sup> *Ibid.*, p. 3.

cedural steps necessary for setting up the control system. However, the negotiations soon became preoccupied with the political implications of stages, which were important to the security interests of both the United States and the Soviet Union; that is, the question of when the United States would no longer be the sole power in possession of atomic weapons.

*The Issue of Enforcement: Sanctions and the Veto*

The third important issue in the effort to establish international control of atomic energy was that of imposition of sanctions on violators. The question of whether violators of international control should be punished grew out of Baruch's advocacy of the idea. He succeeded in having it adopted as part of the U.S. proposal. During the negotiations, the question of the procedural arrangements to deal with sanctions—specifically, whether the veto power in the U.N. Security Council could be exercised over decisions on them—represented a major obstacle to agreement.

DETERMINING U.S. POLICY ON SANCTIONS

Conant had cautioned the Board of Consultants at the outset that the issue of sanctions was a matter for the Security Council to consider; and during later discussions, one member of the Board pointed out that it would have been presumptuous for a group of technical consultants to comment or make recommendations on such a political subject. During its deliberations, the Board foresaw war as the probable outcome in case of a violation, but needless to say it did not enter into the subject of the organizational mechanism that would be employed to initiate, conduct, and coordinate the war. This was a political problem, in the opinion of the Board, and there was no discussion of it in the Acheson-Lilienthal report.

Baruch's idea of establishing sanctions to enforce the control system was discussed at the time the U.S. proposal was being developed. At a meeting between Baruch's group and the Acheson-Lilienthal groups, opposition by the latter to the idea of sanctions was unanimous, apparently on the grounds that they did not consider the concept workable under existing political circumstances. In turn, the members of Baruch's delegation to the UNAEC viewed the Acheson-Lilienthal plan as offering merely a warning device and less than a secure system to guarantee control of the destructive uses of atomic energy. Although Lilienthal granted that the plan was only a warning device, he, Acheson, and other members of their groups argued that absolute security was unattainable.<sup>123</sup> Nonetheless, Baruch felt strongly that the plan did not provide an adequate measure of security and continued to press Secretary Byrnes for a policy which included penalties. Baruch's position on penalties has been described as follows:

It was important to \* \* \* show the necessity of enforcing the engagements of the nations. Baruch considered penalties the *sine qua non*. He was quite aware this might bring the

<sup>123</sup> Later, Baruch called upon the Joint Chiefs of Staff to comment on the plan for atomic energy control. Both General Dwight Eisenhower and Admiral Chester Nimitz voiced doubts on the effectiveness and acceptability of sanctions, while General Carl Spaatz supported the idea. Although Baruch sought the advice of the military, their views did not enter into the discussions which determined policy. Hewlett and Anderson, *History of the United States Atomic Energy Commission*, pp. 575-576.

United States "athwart of the veto power," for war, the ultimate penalty, might be necessary. \* \* \* Penalties means immediate punishment and elimination of any veto of it. \* \* \* As for the warning elements in the plan, the American people should know how little it amounted to.<sup>124</sup>

Eventually, Baruch obtained approval from President Truman of both the idea of sanctions and the provision that the veto power of the Security Council would not apply to the decision to administer them. Two days before the opening of the UNAEC, Baruch briefed the Senate Special Committee on Atomic Energy on the U.S. proposals, and the members appeared to welcome the plan approved by the President.<sup>125</sup>

#### U.S. POLICY ON THE VETO: ITS RELATION TO ENFORCEMENT

Because U.S. policy on the veto over sanctions was a principal target of Soviet opposition, and a major hindrance in the negotiations, a discussion of this question might be useful to an understanding of the principal issues of this study. It should be noted that the principle of unanimity—that is, the veto power—among the permanent members of the Security Council on security matters had been a controversial issue during negotiation of the U.N. Charter. Strong U.S. support for the veto power has been explained as follows:

\* \* \* The Western powers \* \* \* realized that the veto privilege placed a premium on inaction at precisely the most critical point of great-power disagreement. Long and fruitless efforts were therefore made by American experts \* \* \* to devise some method of decisionmaking on security issues that would allow the Council to override the negative vote of at least one permanent member. All such formulae, however, collapsed before the *dominating political fact* that the administration was not prepared to allow American armed forces to be ordered into some unknown future military action without U.S. consent. Even had Executive officials felt less strongly on the question, they would never have assumed that Congress could be persuaded to relinquish so much authority to an untried international organization.<sup>126</sup>

Thus, the policy of the United States on the veto, as it applied to the question of enforcement of atomic energy control, represented a significant departure from its earlier policy on the veto within the general framework of the United Nations. Although the question of sanctions and its relationship with the veto power was primarily a political matter, a number of technological factors associated with atomic energy control may have influenced the United States in its policy decisions on these subjects.

This change in U.S. policy was probably attributable to the nature of atomic weapons and the destructive force which they represented to policymakers, a perception epitomized in Baruch's opening address to the UNAEC:

Science has torn from nature a secret so vast in its potentialities that our minds cower from the terror it creates. Yet

<sup>124</sup> Ibid., pp. 573-574.

<sup>125</sup> Ibid., pp. 565-574.

<sup>126</sup> Emphasis added. Ruth B. Russell, *The United Nations and United States Security Policy*. (Washington, D.C.: Brookings, 1968), p. 51.

terror is not enough to inhibit the use of the atomic bomb. The terror created by weapons has never stopped men from employing them. For each new weapon a defense has been produced, in time. But now we face a condition in which adequate defense does not exist. \* \* \* The search of science for the absolute weapon has reached fruition in this country.<sup>127</sup>

In light of the fact that the atomic bomb inspired such awe, it is not difficult to understand how an important U.S. political stance could experience such a drastic modification in the form of the proposal that the veto power should not be exercised over sanctions for violations of atomic energy control.<sup>128</sup>

Another technological consideration which may have had a bearing on U.S. policy toward the veto question concerned the "warning device" aspect of the plan in the Acheson-Lilienthal report. Policy discussions revealed that the Board had not envisioned any international stockpile of bombs. Thus, if a nation decided to embark on an atomic weapons development program by seizing production facilities of the international Authority, the sequence of technological processes of producing atomic weapons would take considerable time. The Board estimated that it would be approximately 1 year before enough atomic weapons could be produced to constitute a significant threat. During the drafting of the Acheson-Lilienthal report, one member of the group envisioned the following situation in the event of a violation of the international control system:

Supposing denatured material had been allocated to a plant which is located in Ruritania, and the Ruritanian Pooh-Bah decides to welsh on the Atomic Development Authority by removing the denaturants. The Authority's representatives, made up of people of many nationalities, try to check on the plant, on the watch for just such a move. So the Pooh-Bah sends soldiers to get the ADA people out of the way and seize the factory. Assuming that the Pooh-Bah has the scientists working for him, it will still take him in the neighborhood of a year to turn out a bomb. While he's at it, the member countries of the Authority, having received no satisfactory answer to what's become of their inspectors, go to war with Ruritania \* \* \* the war would have to be along conventional lines. Naturally, the atomic plant would be the first target for the attacking planes.<sup>129</sup>

Presumably, the Board considered that the warning device aspect of the plan satisfied the technological requirements of security. However, this conception was not shared by all of those involved in U.S. policy deliberations. One source states that Baruch's position on this question was that the Board's plan provided "no more of a warning than '3 months to a year,'" although the origin of his estimate is not clear. Moreover, Baruch added that technological developments could shorten even that amount of time.<sup>130</sup> These estimates may account for

<sup>127</sup> State Department, *Growth of a Policy*, pp. 138-139.

<sup>128</sup> Nonetheless, it should be recalled that this was not the first occasion when this line of thinking on the destructive potential of atomic energy affected policy, for it had played an important role in influencing nations, including the United States, to take the initial steps; for example, the Three Nation Agreed Declaration, et cetera, toward seeking agreement on international control of atomic energy.

<sup>129</sup> Liberman, *The Scorpion and the Tarantula*, p. 247.

<sup>130</sup> Hewlett and Anderson, *History of the United States Atomic Energy Commission*, p. 573.

the sense of urgency with which Baruch treated the veto question in his opening speech to the UNAEC:

\* \* \* There must be no veto to protect those who violate their solemn agreements not to develop or use atomic energy for destructive purposes.

The bomb does not wait upon debate. To delay may be to die. The time between violation and preventive action or punishment would be all too short for extended discussion as to the course to be followed.<sup>131</sup>

It is unlikely, however, that these factors alone can account for Baruch's adamant position on penalties and the veto question. Early in the policy deliberations following Baruch's appointment, the elder statesman had raised the possibility to Secretary Byrnes and others that the negotiations of the UNAEC might provide a forum for the attainment of world disarmament, encompassing all weapons. One writer labelled Baruch's notion as "an expression of his idealism and expansive self-image,"<sup>132</sup> although his position was supported by Eberstadt and Hancock. When Hancock learned that the Secretary of State was not enthusiastic about Baruch's idea, one source describes his reaction: "As Hancock sized up the situation, Byrnes was trying to simplify the job by limiting it to atomic energy."<sup>133</sup> The exchange on the subject between Baruch and Byrnes has been described as follows:

\* \* \* Byrnes would have none of this vision. It would be "a serious mistake," he said, to attempt to cover these other weapons as part of Baruch's present assignment. Baruch was equally strong in response: "The problem of atomic energy is a problem of the hearts of men—no plan so far proposed gives any guarantee of assurance." Only total disarmament offered such a guarantee. Byrnes was unmoved.<sup>134</sup>

News of Baruch's proposal for total disarmament prompted one member of the Senate Special Committee on Atomic Energy to admonish him to "stick to his knitting."<sup>135</sup> Thus, since Baruch's idea of a comprehensive disarmament proposal had been thwarted, it is understandable, perhaps, that if his efforts had to be confined to atomic energy, he might seek a control system which would be as secure as possible, by providing "immediate, swift, and sure punishment of those who violate the agreements that are reached by the nations."<sup>136</sup>

In addition, Baruch's insistence on removal of the veto as a vital component of the proposed system of punishments may have been prompted by the growing U.S. attitude of mistrust of the Soviet Union. The belief was strong that violations most likely would originate with the Soviet Union or one of its allies. Moreover, the Soviet Union's performance during the first months of the United Nations, which was characterized by frequent use of the veto in the Security Council, fortified the impression that Moscow would have recourse to the veto to avoid the consequences of its violations.<sup>137</sup>

<sup>131</sup> State Department, *Growth of a Policy*, pp. 142-143.

<sup>132</sup> Lieberman, *The Scorpion and the Tarantula*, p. 277.

<sup>133</sup> Hewlett and Anderson, *History of the Atomic Energy Commission*, p. 569.

<sup>134</sup> Lieberman, *The Scorpion and the Tarantula*, p. 290.

<sup>135</sup> Hewlett and Anderson, *History of the Atomic Energy Commission*, p. 576.

<sup>136</sup> State Department, *Growth of a Policy*, p. 138.

<sup>137</sup> During the meetings of the UNAEC itself, a resolution was introduced in the General Assembly, calling for an investigation of Soviet abuse of the veto. Bechhoefer, *Postwar Negotiations*, p. 57.

Thus, by proposing sanctions to achieve "an international law with teeth in it," Baruch may have compensated for losing the personal opportunity to propose and negotiate a comprehensive disarmament plan. He may also have sought to satisfy the requirements of a control system which he believed the emerging political relationships of the atomic age demanded.

POLITICAL UNACCEPTABILITY OF VETO-FREE CONTROL IN THE  
NEGOTIATIONS

At issue during the negotiations, sanctions and the veto became involved with the political arguments associated with the general issue of the veto power in the United Nations. In order to understand how this issue contributed to the failure of the negotiations, it might be helpful to examine briefly the course of the issue and U.S. policy during the international discussions of international control of atomic energy.

During the negotiations, the third U.S. memorandum provided a vehicle to answer the various legal questions arising from the relationship between the proposed international Authority and the United Nations, and an important part of this issue was sanctions. The memorandum listed those activities which if pursued by an individual nation would constitute a serious threat to the peace. These included virtually every possible breach of the control arrangement.<sup>138</sup>

The memorandum proposed that the Security Council would determine the response to these violations. In defending the provision to exclude these matters from the veto, the U.S. position was that it did not impair the principle of unanimity in the United Nations, because nations would enter into this particular arrangement freely. It also emphasized that the proposal to exclude the veto applied only to the question of atomic energy. An additional point raised by the memorandum was that the question of sanctions could not be discussed without considering the provisions of Article 51 of the U.N. Charter, which recognized the "inherent right of individual or collective self-defense if an armed attack occurs against a Member of the United Nations." Besides noting that an attack with atomic weapons would justify a response under Article 51, the memorandum suggested that a broader definition of "armed attack" might be included in the treaty for the Authority, to include certain preliminary steps to such action.

Baruch was unyielding on the veto question during the negotiations, and his perseverance was matched by the adamant opposition of the Soviet Union. One example of the Soviet position on this question is in a speech by Gromyko in July 1946:

We believe that it would be wrong, and perhaps fatal, to undermine, in practice to abandon, the principle of unanimity

<sup>138</sup> Illegal possession or use of an atomic bomb; illegal possession, or separation, of atomic material suitable for use in an atomic bomb; seizure of any plant or other property belonging to, or licensed by, the Authority; willful interference with the activities of the Authority; creation or operation of dangerous projects in a manner contrary to, or in the absence of, a license granted by the Authority. The U.S. proposal also granted that administrative decisions would be made and carried out only by the international Authority, and that the Authority could make decisions on other matters, which were not serious threats to the peace. The latter could be enforced by the Security Council as procedural matters, a process which did not involve the veto. State Department, *Growth of a Policy*, pp. 161-163.

of the permanent members of the Security Council \* \* \* We cannot accept any proposal which would undermine in any degree the principle of unanimity of the permanent members of the Security Council on all questions relating to the maintenance of peace and security.<sup>139</sup>

Bechhoefer notes that Baruch attempted "to soften the impact of his position" by recalling that the proposal to eliminate the veto would apply only to the control of atomic energy. He also points out that in terms of the legality of the provision, it would not affect the veto power as established by the U.N. Charter. But, in Bechhoefer's view, because the proposal "ran counter to the basic concept of the continued unity of the great powers as embodied in the Charter," it indicated to the Soviet Union "a U.S. decision to attack the underlying basis of postwar settlements."<sup>140</sup>

Baruch was so firmly convinced of the correctness of his stance on the veto that he may have missed an opportunity to bargain with the Soviets on the issue, or at least to place them in a position where they would be called upon to reveal further details of their proposals. Bechhoefer cites an instance in 1947, when the Soviet Union proposed an amendment that the Authority "should carry out their control and inspection functions, acting on the basis of their own rules, which should provide for the adoption of decisions, in appropriate cases, by the majority vote."<sup>141</sup> The Soviet Union was willing to grant the majority vote of the Authority "in appropriate cases," a term which could have been explored. Nonetheless, discussion of this amendment would have "shifted the question from the problem of a veto to the issue of the authority of the control commission, which was *politically far less sensitive*." However, Baruch would accept nothing less than his original proposal.<sup>142</sup>

While U.S. policy on the veto had its foundations in both technological and political factors, it would appear that the underlying political relations of the great powers in the United Nations provided a major source of the difficulty in the negotiations. Indeed, Bechhoefer concludes that Baruch's position on the veto gave the Soviets the opportunity to oppose the U.S. proposals "for the wrong reason." The basis for this assertion is that disagreement over the veto involved basic political differences between the two countries rather than the substantive, technical aspects of control.<sup>143</sup>

#### *Recapitulation of the Three Issues of Atomic Control*

Thus, the United States brought before the United Nations three issues making up a program of international control of atomic energy. The first involved the control institution itself. This called for a scheme of international ownership and regulation, with considerable intimate interaction with national programs of atomic energy development. Possibly the newly-formed United Nations would have been unequal to the large task of managing such a program. But the tech-

<sup>139</sup> Ibid., p. 82.

<sup>140</sup> Bechhoefer, *Postwar Negotiations*, pp. 57-58.

<sup>141</sup> State Department, *Policy at the Crossroads*, p. 75.

<sup>142</sup> Emphasis added. Bechhoefer, *Postwar Negotiations*, p. 59.

<sup>143</sup> Ibid., pp. 59-60.

nical orientation of the design of the proposed institution left unanswered many political questions, and after long debate in the United Nations Atomic Energy Commission, the scheme was tabled.

The issue of the transition from U.S. monopoly to international control met the same fate. Lacking agreement on the *what*, it was hard to design the *how* of a plan. After much deliberation, the UNAEC came reluctantly to this conclusion.

The question of what should be done to preserve world security in the event of a violation of an international atomic control agreement likewise went unresolved. This question went to the heart of the issue of collective security versus national sovereignty. But even though it came at a time when only one nation possessed atomic weapons capability, the quest for agreement went unsatisfied.

## V. SOME DISTINCTIVE FEATURES OF THE NEGOTIATIONS

It appears as though the negotiations came to nothing because the control plans advanced by the Soviet Union and the United States were each based upon their perceptions of a desirable world order and the defense of their respective national interests. In the circumstances of that period, these views and the plans based on them were not reconcilable. The reasoning and perceptions underlying Soviet policy decisions at that juncture are not known with certainty 25 years later, and clearly were less well perceived at that time. The fact that many of the following observations relate mainly to U.S. policy is not intended to be solely a comment on this country's approach to atomic energy control. That such observations are useful arises from the fact that basically it was the U.S. plan which was accepted by the majority in the international negotiations. Therefore, an important part of an inquiry into the outcome of the negotiations lies in the origins of U.S. policy and inputs of U.S. scientists and diplomats.<sup>144</sup>

### *Excessive U.S. Reliance on Technical Control Plan*

One characteristic of the efforts to achieve control of atomic energy which may have contributed to their failure was the tendency on the part of U.S. policymakers and of the majority of the negotiators in the UNAEC to accept the constraints developed out of technological considerations as the basis for their proposals for a control arrangement. The foundations for the concrete proposals by the United States were the technological studies of the Board of Consultants, and when the first signs of impasse appeared in the UNAEC, in 1946, the negotiators chose to await a report from the Scientific and Technical Committee before proceeding with the negotiations. However, each scientific group, Lilienthal's and the UNAEC committee, divorced itself from any responsibility for considering the political factors involved in a control arrangement. And the diplomats and politicians, in addressing themselves to the basic political problems which were preventing agreement, chose to seek a firm basis for their proposals in what were considered to be the undeniable technological facts of the situation.

When it was evident that there was little hope for agreement, the basic assertion from the UNAEC was that a minority had failed to recognize the compelling technical factors needed to shape an adequate control system.<sup>145</sup> But there appears to have been a larger failure

<sup>144</sup> Indeed, that the majority in the negotiations did accept the U.S. plan almost in its entirety may indicate how much influence in the United Nations the United States possessed at this time, both as an emergent great power and as the sole owner of atomic weapons. It is not the purpose of this study to determine to what extent the United States was aware of such influence and whether it took advantage of it in the atomic energy negotiations. In this regard the Soviet Union was certainly aware of the weakness of its position in terms of U.N. voting support generally. How this reality affected the Soviet inclinations to place a decisive new economic and weapons technology under the control of the U.N. can only be a matter for speculation.

<sup>145</sup> A resolution was passed by the UNAEC on the Soviet proposals on Apr. 5, 1948, which stated that they "ignore existing technical knowledge \* \* \* and do not provide an adequate basis for the effective international control of atomic energy." (State Department, *Policy at the Crossroads*, p. iv.) Moreover a majority of the Commission declared that they were "unable to secure the agreement of the USSR to even those elements of effective control considered essential from the technical point of view \* \* \*" (Ibid., p. 1).

of the participants on both sides to appreciate that even as powerful a scientific and technological event as the discovery and decisive military use of atomic energy could not of itself prompt so radical a re-ordering of diplomacy as to reconcile the overwhelming political stakes at issue between the United States and the Soviet Union. Specifically, this was a failure to reconcile (a) the basic technological fact that any effective international control system would have to cope with the difficulty of separating peaceful from military activities, and (b) the fundamental diplomatic reality that any such system would have to accommodate both the Soviet Union's traditional fear of foreign intrusion and the U.S. fear of becoming an inferior military power. In retrospect, it is hard to avoid the conclusion that the concessions necessary on all sides to establish a workable arrangement for international nuclear control were beyond the scope of traditional international behavior. A profound change in concepts of sovereignty and security would have been required to insure the success of the negotiations. Possibly this principle remains as unappreciated today as it was at the time the Baruch plan was being considered.

#### LACK OF U.S. ATTENTION TO SOVIET REQUIREMENTS

Based upon U.S. perceptions of Soviet motives and of Soviet capability for nuclear development, acceptability of the U.S. plan for atomic energy control was secondary to requirements for an effective control system. As early as the U.S. preparations for the Truman-Attlee-King meetings, *before* the Soviet Union had had an opportunity to participate in any forum on the atomic energy question, the intent of U.S. policy was to devise a workable system of control without special regard for acceptability of the plan to any other parties.<sup>146</sup> Similarly, throughout the deliberations between Acheson's committee and Lilienthal's group, very little was said regarding the possibility of or the requirements for Soviet acceptance of the plan, although there was some recognition of the prevalent political facts of life, largely mutual suspicion, which would characterize United States-Soviet relations during the early postwar period. But an awareness of these factors did not prompt active consideration of whether the Soviet Union would accept the plan. Rather, it became the goal of U.S. policy to devise the necessary arrangements to prevent violation of a control system, and eventually, with Baruch's policy on punishments and the veto, a guaranteed course of action in the event of violation. To the United States, the most likely target of its policy toward thwarting or punishing violators was the Soviet Union.

The suspicious and negative attitude in the West toward the Soviet penchant for secrecy was undoubtedly reinforced by the expansionist actions of the Soviet Union in the East European countries following the war. Yet Soviet expansionism has been explained as an effort to buffer that country from foreign incursions, a traditional fear which had been exacerbated by the devastating Soviet experience

<sup>146</sup> Indeed, Secretary Byrnes approached the negotiations for international control of atomic energy with a negative attitude, which was carried over into a policy paper which Bush prepared for the meeting. In characterizing a conversation with Byrnes on the issue, Bush commented to Conant that "we were discussing carefully ways and means toward an effective accord [i.e., one which was without risk to the United States] rather than merely struggling with the question of whether any accord is possible." Bush to Conant, Nov. 8, 1945, in the Bush Papers, as quoted in Lieberman, *The Scorpion and the Tarantula*, p. 167.

during World War II.<sup>147</sup> The question of how this particular explanation of Soviet actions at that time might have justified Soviet foreign policy in general is a political problem beyond the scope of this study. Still, it may be worth noting that this observation, as a possible explanation of Soviet expansionism, has been offered to account for Soviet rejection of certain elements of the Baruch plan.<sup>148</sup> In the Soviet view, these proposed arrangements would have made the Soviet Union vulnerable by admitting foreigners to the Soviet Union in positions of authority. Apart from the ideological trauma of this foreign penetration, their presence might enable potential enemies of the Soviets to detect sources of strength to attack and evidences of weakness to exploit. On the other hand, if the United States had recognized Eastern Europe as a Soviet sphere of influence, the same argument continues, this gesture may have represented enough of a concession by the West to contribute to obtaining a Soviet concession: modification of its stand on the presence of foreign inspectors. To some extent, a certain amount of outside inspection probably would have been necessary for effective control, and obviously a change in the Soviet position was essential to reaching agreement.<sup>149</sup>

#### SOVIET CALCULATION OF U.S. POSITION

The Soviet Union's calculation of the motives of the United States probably encountered uncertainty with regard to the place which atomic weapons held in the overall defense posture of the United States. While the Soviets had retained their large forces of manpower following the war, the United States had undergone rapid demobilization of its armies. The extent of U.S. dependence on the atomic bomb, and thus any demonstration of its willingness to relinquish it, were governed by basic U.S. security considerations. In turn, the fact that the atomic weapon had become such an integral part of the U.S. defense posture only complicated its own efforts to devise an equitable policy on a system of international control without jeopardizing U.S. or world security. Indeed, Bechhoefer points out that "By January 1947 \* \* \* it had been ascertained that \* \* \* United States demobilization had reached the stage where Soviet acceptance [of the U.S. plan] would leave the United States naked." Bechhoefer believes this might account for U.S. failure to explain transitional stages in detail, including the stage for elimination of the bomb, although he does not explicitly question the sincerity of U.S. motives.<sup>150</sup>

The principle behind the declarations by the United States that it would hold atomic energy in a "sacred trust" in the absence of international control raises an additional point which might explain Soviet skepticism toward the U.S. plan. This point concerns the moral force which U.S. officials attached to their pronouncements bearing on the U.S. position in the negotiations. It would seem that merely by stating its aims and responsibilities in atomic energy, these officials may have expected other countries to accept the U.S. pledges without question. For example, during a policy discussion of stages, Acheson's re-

<sup>147</sup> Lieberman, *The Scorpion and the Tarantula*, p. 402.

<sup>148</sup> *Ibid.*, p. 404.

<sup>149</sup> *Ibid.*, p. 404. Lieberman's interpretation is, however, a hypothesis which it is impossible to prove or disprove at the present time.

<sup>150</sup> Bechhoefer, *Postwar Negotiations*, p. 11.

marks are described in one source as follows: "When the United States presented its plan, it would have to explain the process of transition. Then the nations would establish an international authority. \* \* \* The United States would not give everything away the day it agreed to institute the plan; rather, it would promise to do so."<sup>151</sup> Certain actions—e.g., the atomic test at Bikini in July 1946, less than one month following the opening of the UNAEC, or the U.S. failure in the UNAEC negotiations to define the specific control conditions which would determine when it would relinquish its atomic weapons—might well have cast doubt on those pledges, particularly in the eyes of the Soviet Union.

Thus, both the United States and the Soviet Union acted in the negotiations primarily to meet their individual needs of security, based on their own particular perceptions of the existing threat. Some of these perceptions may have been less than accurate. Nevertheless, as a result, a basic element in each country's policy toward atomic energy control, which could not be ignored or superseded by technological requirements, was to avoid an arrangement which would have subjected one party to the suspected goal of domination by the other. For the most part, there is little evidence that a substantial effort was made to combine or reach a compromise between those technological and diplomatic elements which were necessary to reach agreement on international control. By and large, representatives from each field retained their parochial interests, especially in light of the attitudes of representatives of one field toward the other, and approached the problem of atomic energy control accordingly. In short, once the diplomats had grasped the import of the possibility of a facile solution offered by the technical experts, they began to mistrust it. For their part, the technical experts had probably underestimated the political difficulties in implementing the solution. And finally, the tasks of both groups were made difficult by the many previous commitments to allies and other countries and to the American people.

#### *One Attempt at Technical-Diplomatic Coordination*

One example of an attempt to combine technological and political factors of atomic energy control may be evident in the proposal of the groups led by Acheson and Lilienthal to assign a research and development function to the international Authority. Recognizing the negative human response to police methods of inspection, they hoped that the purposes of security could be served in two ways through research in atomic energy. First, because some national activity would be retained in this area, the potential for national rivalries would be channeled into constructive purposes. Second, this function of the international Authority would keep the supranational body technically advanced in terms of detecting activities which were illegal under the

<sup>151</sup> Hewlett and Anderson, *History of the United States Atomic Energy Commission*, p. 548.

terms of the agreement. The research carried on by the international Authority would serve as a beneficial source of consultation for the national efforts; periodic inspections would not be solely investigative, in the sense of arousing suspicions, which would only threaten the entire system of control. Rather, as envisioned by the Board, inspections would provide an opportunity for individual nations to receive guidance in their efforts through the knowledge of the inspectors, and inspections would be less intrusive because of the generally beneficial expertise developed in the inspectors by the Authority. Thus, the purposes of security would be served through methods which met the needs of the technology and the less tangible human factors inherent in international control. However, obstacles to agreement were so weighty in relation to the total effort to agree on a system of international control that this element of the U.S. plan exercised no positive influence on the outcome of the negotiations.

#### *Underlying Misconceptions in U.S. Policy*

A number of misconceptions and miscalculations during the U.S. policymaking process on matters pertaining to both the technology and the politics of atomic energy control may have influenced the outcome of the negotiations. U.S. policy in the negotiations may possibly have been conditioned by an attitude that possession of the bomb provided great leverage for the United States to press for acceptance of its proposals.

This attitude rested on a number of technological assumptions, which eventually proved incorrect. First, U.S. estimates regarding the Soviet Union's ability to develop its own atomic weapons ranged anywhere from 5 to 25 years, whereas the first Soviet atomic explosion occurred in 1949, just 3 years following the opening of the UNAEC. This development changed the entire character of the atomic energy control problem. Although negotiations on the Baruch plan continued until the early 1950's, Soviet possession of atomic weapons—some sources reason—necessitated a different approach to arms control, and perhaps even made the Baruch proposals obsolete.

The length of time during which the United States could expect to maintain its supremacy in the field of atomic energy posed a dilemma for U.S. policy. On the one hand, there was the assumption, based on historically valid technological considerations, that the loss of the U.S. monopoly was inevitable. This recognition contributed greatly to the U.S. commitment to seek international control of atomic energy. On the other hand, erroneous technological intelligence estimates which favored the U.S. position appear to have prompted a further—and as it proved, unwarranted—U.S. assumption that it could attain international control on its own terms, and that it could afford to insist on certain points in its proposals. This attitude was interpreted as "atomic diplomacy" by critics of U.S. proposals, and was justified by proponents of U.S. policy as fulfillment of the U.S. responsibility for the "sacred trust" over atomic energy.

An additional technological misconception which may have played at least a minor role in the outcome of the negotiations concerned the extent to which peaceful uses of atomic energy would be made readily available to benefit a large number of countries. Much of the scientific and technological information which would have contributed sub-

stantially to development of the peaceful uses of atomic energy could not be released in the absence of international controls, as such peaceful development was so closely connected with the information necessary for development of an atomic weapon. Thus, the hope of sharing the knowledge for beneficial uses of atomic energy became an incentive for the Lilienthal Board to devise an effective control system. Such hopes apparently influenced both U.S. policymakers and the other negotiators in the UNAEC to believe that the control plan offered something more than a rein on the destructive forces of atomic energy. Although present-day development of atomic energy for peaceful uses—a quarter-century later—is advancing at a substantial pace, the predictions of 1945 regarding the imminent development of peaceful uses seem overly optimistic. Notwithstanding the optimism, however, security factors so overshadowed all other issues in the negotiations that the drive by individual countries for active international cooperation in peaceful development failed to develop real momentum at that time.

These technological factors tended to limit the options of the non-nuclear countries participating in the negotiations. Essentially, for any such country there were only two options: development of its own atomic bomb, at considerable industrial effort and economic cost, or controlled access to the technology through acceptance of a plan for international control, defined by the only country which possessed the ultimate weapon. To supporters of the U.S. proposals, perhaps sufficient confidence existed between them and the United States that its pledges and its control plan seemed reasonable. Moreover, many countries, recovering from their massive war efforts, lacked the reserves of resources to develop their own atomic weapons. The promise of the potential benefits of atomic energy for national purposes, however limited, which the control plan offered may have provided additional incentive for approval of the U.S. proposals.

It is doubtful that the Soviets experienced a similar reaction. In commenting on the plan proposed by the Board of Consultants, one source speculates on the Soviet reaction as follows:

\* \* \* The members of the Lilienthal Board were convinced that adoption of their plan by the Soviet Union would cause no less than another revolution in Russian society—a revolution which was to be accomplished apparently in return for Russian involvement in atomic development. This could not have seemed a very desirable *quid pro quo* to the Russians, who knew that they were capable of building atomic weapons themselves in three or four years.<sup>152</sup>

A political miscalculation by the United States affecting the negotiations can be identified in light of U.S. experience in its relations with the Soviet Union. One source has expressed the possible Soviet perception of the Baruch plan as follows: "The clear advantage offered the U.S.S.R. was relief from an 'out of the blue' American atomic air attack, but at a price of forgoing any early moves toward nuclear equality."<sup>153</sup> An almost axiomatic reflex of the Soviet approach to arms control negotiation has been the notion that the Soviet Union will not negotiate from an inferior military position. One explanation

<sup>152</sup> Lieberman, *The Scorpion and the Tarantula*, p. 409.

<sup>153</sup> George H. Quester, *Nuclear Diplomacy; the First 25 Years* (New York: Dunellen Co., 1970), p. 20.

for the delay in the opening of recent negotiations on strategic arms limitation has been Soviet reluctance to bargain until it had attained "parity" with the United States in strategic weapons.<sup>154</sup>

A fuller appreciation of this Soviet attitude during the UNAEC negotiations might have broadened the perspective of U.S. policy. Moreover, if U.S. policymakers had been aware of the fact that the Soviet Union had been working assiduously on its own atomic weapons during the negotiations, a different approach might have been used. Two cabinet members, Secretary Stimson, and the Secretary of Commerce, Henry Wallace, suggested that the Soviet Union be treated in a more open manner on atomic energy questions. Stimson, who left the Administration in September 1945, suggested including the Soviets in atomic energy development as soon as possible after the war. Such a move, he believed, would avert Soviet suspicions regarding U.S. intentions and would mark a first step toward the necessary internationalization of atomic energy, without giving rise to an arms race. During the UNAEC negotiations, Wallace publicly encouraged more active cooperation with the Soviet Union, to the point where his remarks became a source of embarrassment to the Administration; to Baruch the vigorous expression of the Wallace position was undermining the U.S. position at the UNAEC. As a result, Truman asked Wallace to leave his cabinet. Obviously, the suggestions of both Stimson and Wallace fell on deaf ears of those in power, who felt it necessary to adopt a defensive position toward the Soviet Union.<sup>155</sup>

One source declares that a major weakness of the U.S. policy on atomic energy was its diplomatic timing. Details of U.S. policy on international control remained unclear for a few months after the first atomic weapon was used. And the approach to the Soviet Union at the Moscow conference was made only after consultations with the British and the Canadians, a move which one source sees as an indication to the Soviets of a conspiracy against them.<sup>156</sup>

Another issue in the negotiations which may have represented a political miscalculation by the United States concerned its policy on eliminating the veto over sanctions. Bechhoefer concludes that U.S. insistence on this provision gave the Soviets the wrong reason for opposing the U.S. control plan, since it presented an issue which was unrelated to the substantive problems of control.<sup>157</sup> In light of the way U.S. policy on the veto developed just two years after the opening of the UNAEC, the political impact of Baruch's attitude toward the veto in atomic energy matters does not seem to have been noticed by other policymakers at the time of the UNAEC meetings. Indeed, U.S. policy toward the veto soon developed in such a way as to be inconsistent with the position which Baruch was striving to maintain. The Vandenberg resolution, passed by the U.S. Senate in July 1948,<sup>158</sup> recommended

<sup>154</sup> For example, Dr. Marshall Shulman, Director of the Russian Institute at Columbia University, recently testified to a Senate committee that "Perhaps one reason for the delay in the Soviet response was the desire to wait until deployments then planned had made their appearance, so that negotiations could be conducted on the basis of equality." U.S. Congress, Senate, Committee on Foreign Relations, Subcommittee on Arms Control, International Law and Organization, *Arms Control Implications of Current Defense Budget*, Hearings, June and July, 1971, 92d Cong., first sess. (Washington, U.S. Government Printing Office, 1971), p. 246.

<sup>155</sup> For detailed accounts of the positions taken by Stimson and Wallace, see Lieberman, *The Scorpion and the Tarantula*, pp. 138-155 and pp. 334-358, respectively.

<sup>156</sup> *Ibid.*, p. 405.

<sup>157</sup> Bechhoefer, *Postwar Negotiations*, pp. 59-60.

<sup>158</sup> For a complete text of the Vandenberg resolution, see U.S. Congress, Senate, Subcommittee on the United Nations Charter, *Review of the United Nations Charter. A Collection of Documents*, 83d Cong., Second sess., January 7, 1954. (Washington, U.S. Government Printing Office, 1956), pp. 140-141.

that the United States supports "voluntary agreement to remove the veto from all questions involving pacific settlements of international disputes and situations, and from the admission of new members." (These were areas most hindered by Soviet use of the veto in the Security Council.) However, consideration of the resolution may have reinforced the U.S. position of maintaining its veto power over matters of enforcement, particularly those involving the use of armed force. The Senate Foreign Relations Committee report stated:

Some advocates of Charter revision contend that the veto should be stripped from decisions involving enforcement action and the use of armed forces by the Security Council. It should be pointed out, however, that such a proposal would be vigorously opposed by all the great powers, who remain unwilling to permit their troops to be thrown into action without their consent, and by many other members of the United Nations as well. Moreover, it is significant that it is not enforcement action in a single instance which has been blocked by the veto.<sup>159</sup>

Through this resolution, the Senate helped to clarify U.S. policy on enforcement in the United Nations, but these principles represented a divergence from Baruch's position on atomic energy questions.

The Vandenberg resolution also paved the way for the United States to take an active part in engineering collective defense arrangements such as NATO, under the terms of Article 51 of the U.N. Charter. The fact that the United States sought this kind of vehicle to ensure its security and that of its allies marked a recognition by the United States of a need for alternatives to the Security Council in this regard. As expressed in the UNAEC negotiations, the U.S. position on the security arrangements of atomic energy control placed a great deal of emphasis on the Security Council as the principal organ to deal with questions of this nature. However, this position toward the machinery for security matters seemed to undergo a transition, as indicated by subsequent U.S. participation in collective defense arrangements. The development of collective security arrangements may or may not represent a possible alternative which was neglected in the effort to set up machinery for security under atomic energy control. But it may indicate a general trend which was casting the Security Council in a different role from that which seemed to govern the atomic energy proposals. And as involvement of the Security Council demanded resolution of the question of how the veto would be used, the emphasis on that body may have contributed to the failure of the negotiations.

Given the existing political conditions at the time, it would be difficult in retrospect to determine whether a change of one or several factors or developments might have altered the results of the negotiations. The complexity of the relationships among science, technology, and diplomacy is abundantly illustrated through an examination of these first efforts to control atomic energy. It is clear, from the perspective of this study, that elements of both the diplomatic and technological aspects of atomic energy contributed to the failure of the initial international efforts to control it.

<sup>159</sup> Ibid., p. 135.

## VI. CONCLUDING OBSERVATIONS

The discovery of nuclear fission and its subsequent military application by the United States altered the balance of power among the major nations of the world and gave to the United States a few brief years of exclusive possession of a military weapon of truly revolutionary potency. During this transitional period and until the present era of nuclear stalemate, American diplomacy was able to function from a position of great military strength with little need to make concessions.

One of the first impacts of the discovery upon American diplomacy was the task accepted by U.S. diplomats of doing what they could to bring the nations of the world into sufficient agreement to establish the international control of nuclear energy. Examination of their unsuccessful attempt to do so suggests several observations about the impact of science and technology upon American diplomacy and international relations.

In this examination, it is necessary to be aware of a distinction between two questions associated with international control of atomic energy and the issue of the interplay among science, technology, and diplomacy. First one can examine the events surrounding the Baruch plan as they exemplify the impact on diplomacy of an unprecedented technological achievement, the atom bomb. The second consideration arises from the fact that there were certain technological principles of atomic energy which determined the necessary technological characteristics of the control system. One might call this area the "technology of control." Thus, the second question to consider is the interaction between the technology of control and the conduct of the diplomatic negotiations to establish a control system. A recognition of this distinction in terms of the scope of this study is important to an understanding of the following discussion.

### *Impact of New Technologies on International Relations*

In light of the way the discoveries associated with atomic energy galvanized U.S. diplomacy and stimulated an extended and global diplomatic effort, this case suggests that the creation and application of new technologies arising from scientific discoveries may so change relations among nations that a system of international control of that technology becomes desirable to one or more parties. Nuclear energy is neither the first nor the last example of a technological innovation suggesting the desirability of international machinery and procedures for controlling it. But it is probably the most dramatic example to date.<sup>160</sup>

On the other hand, the fact that the diplomatic effort arose out of the discovery of fission, a radical development in itself, did not change the basic function of diplomacy or the behavior of diplomats. The U.S.

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<sup>160</sup> Other examples would include aviation, warships, supertankers, and communications satellites.

experience suggests the venerable aphorism: "Plus ca change, plus c'est la meme chose." The idealism of science and its traditions for international cooperation were not strong enough to overcome international political differences. Not even an awareness of the awesome destructive force of the atomic bomb provided sufficient incentive to nations to agree on a secure form of control over atomic energy. In the face of a new weapon which drastically altered traditional concepts of war, intense rivalries among different national interests prevented a movement toward common ground on international control of atomic energy.

While exclusive possession of a new technology stemming from a scientific discovery may give a nation an advantage in international affairs, that advantage is likely to shrink quickly. In the case of nuclear energy, the principal disadvantaged country was able to duplicate the discovery of fission and to create a rudimentary initial technology sufficient to permit detonation of a nuclear device while the negotiations were still in progress. Yet during this time U.S. negotiators apparently assumed that secrecy could preserve their advantage for a comfortably long period of diplomatic accommodation. Thus, another lesson from this study is that it is unrealistic to rely on secrecy, once the application of a new technology has been forcefully demonstrated before the world as in the case of the atomic bombs, to prevent other nations from acquiring or recreating this technology.

In approaching the problem which the new atomic energy technology imposed on U.S. diplomacy, there was recognition of the need to combine elements of both areas to achieve a solution to the problem. While this principle was easily accepted by diplomats and scientists alike, members of each profession were not successful in putting the principle into practice. To a considerable extent, the differences between men like Lilienthal and Baruch were founded on a certain lack of appreciation on each side for the manner in which the members of the other side approached the problem of the international control of atomic energy. Perhaps this case indicates that for science and diplomacy to work together efficiently, the members of each field must express their respective points of view fully and in terms which can be understood and applied by members of the other field. At the same time, there must be a special receptivity by members of each field and a special willingness to accommodate to the outlook of the other, in order to attain the ultimate goal.

Not only were mistakes made in the course of the interaction of science and diplomacy, but there were also a number of miscalculations by the experts in their respective fields, as described in the previous section. Whether or to what extent these particular elements contributed to the failure of the negotiations would be difficult to determine. Total accuracy on the part of either scientists or diplomats may be too much to expect, but certainly in areas basic to the solution of critical problems, a high degree of accuracy would seem to be a reasonable and necessary goal.

*The Diplomatic Task: Combining Effectiveness and Acceptability*

The second major portion of this conclusion deals with the technology of control and the diplomatic efforts to cope with it. This question breaks down further into two features of a control system in which science, technology, and diplomacy became involved: effectiveness and

acceptability. The first concerns those characteristics required of an effective system, that is, one which merely fulfilled the function of control. For the most part, these could be found primarily in the area of science and technology of atomic energy, although certain political factors were thought to be essential to a workable plan. The second has to do with the acceptability of the plan, those technological and political characteristics of the plan which would lead to agreement among nations. In turn, those aspects of the plan which promoted its capacity for effectiveness or acceptability interacted in ways which may have contributed to the failure of the negotiations.

During negotiation of the Baruch plan, one can detect two absolute factors which were peculiar to the efforts to attain an effective system of international control over atomic energy: a technological reality and a political reality created by the discovery and use of atomic energy. In turn, both of these realities created substantial problems for the negotiations, and thus for the acceptability of the plan.

The predominant political characteristic of atomic energy was the fact that the keeper of the military use of the atom represented an absolute power for a finite period of time. Thus, the control system had to be effective in such a way as to exercise adequate control over this tremendous military force. The primary problem this presented for the United States was the fact that international control affected the very heart of its military security. To the Soviet Union, the political impact of the United States as sole owner of the bomb strengthened the impression of a very real threat to Soviet military security. More assurance of an end to that threat would have been necessary in exchange for Soviet renunciation of its own efforts to develop a bomb and accept international control.

The technological reality of atomic energy which was important to the negotiations was the fact that the processes associated with the peaceful and military uses of atomic energy were approximately the same. And it appeared from the outset that the security of a control system would have to be maintained through inspections of an exceedingly intrusive character. The Soviet Union was faced with this peculiar attribute of the technology of atomic energy which weighed heavily on the choices of a control system and which seriously challenged the closely guarded society of that country. To the United States, a major consideration influenced by this technological fact of life was how to penetrate the rigid secrecy of the Soviet Union in order to prevent or detect its expected violation of the control system. Perhaps also, to some indeterminate degree, this penetration of Soviet society was regarded in the United States as an intrinsically desirable goal, apart from considerations of atomic control.

Thus, during the negotiations to devise a control system, both the United States and the Soviet Union were faced with certain political and technological absolutes which were directly opposite to certain fundamental features of their respective countries. These features were integral to meeting what each country considered the requirements for maintenance of its national security. The negotiations neglected to reconcile these requirements with these dominating technological and political factors of atomic energy in order to attain adequate and acceptable international control.

On the whole, the technology of atomic energy seems to have determined the parameters of the proposals and therefore set the tone of the negotiations. When obstacles arose in the policymaking process and in the negotiations, the consensus was that there had been a failure to recognize the technological factors which supported the proposal for the international control system. Yet little effort was made by the diplomats to come to terms with some of the political problems which contributed significantly to the impasse. At the same time, scientists who were in a position to influence policymakers in the United States and in the UNAEC refused to accept any responsibility for commenting on the political feasibility of control or the political elements of a possible control system.

Perhaps a guiding assumption among policymakers and negotiators alike was that the technological necessities of effective control would force acceptance of that control. But in reality, the drive to devise effectiveness in the control system seems to have ignored, if not to have defied, the need for special diplomatic efforts to achieve acceptability.

The area of acceptability received little if any consideration in U.S. policy discussions. The basis for the U.S. approach may be found in several considerations: a moralistic attitude which characterized the U.S. negotiating technique, arrogance generated by the notion of U.S. leverage, or prejudice toward Soviet science and technology which led to overly hopeful estimates of the life expectancy of the U.S. monopoly over atomic weapons.

It is clear that while science and technology alone could devise a control system which would be efficient in its task, and diplomacy could provide the fundamentals for an acceptable system to protect national security, only a combination of the elements from science, technology, and diplomacy could be expected to devise a workable system for control which would be acceptable to the leading nations of the world.

Underlying many of the conclusions on acceptability is an assumption that all parties entered the UNAEC negotiations in good faith, and were prepared to bargain diligently for a goal which represented the promise of assured security for all. It would be virtually impossible, of course, to determine accurately what were in fact the motives of each country as it entered the negotiations. But it is reasonably certain that the tone of the initial proposals could have helped shape the subsequent behavior of the countries in the negotiations. As it was, the initial proposals may have lessened the force of the drive which was necessary to sustain the bargaining process successfully.

In light of the fact that the Soviets were not far from developing their own atomic weapon, one might infer alternatively that the Soviets entered the negotiations simply for propaganda value and were not genuinely interested in achieving a system of international control of atomic energy. Whether or not this was the case, not everything possible was done by the West to create an atmosphere of trust or a spirit of compromise which would seem to be basic ingredients to meaningful negotiation. This fact could cast doubts on the intentions of the West. On the whole, one cannot discount entirely the possibility of some measure of reluctance on the part of both the United States and the Soviet Union to accept the idea of international control of atomic energy, a sentiment which would inevitably have influenced their behavior in the negotiations.

*U.S. Attitudes in the Conduct of the Negotiations*

Diplomats were clearly the focus of action, with scientists in an advisory capacity. No radically new participation of scientists was observed in these international negotiations.

The interplay between science and technology and diplomacy was not so continuous or extensive as to require direct participation by scientists in the negotiations. Rather, the advice and analysis from science advisers served mainly to set the stage for the diplomats and their negotiations.

At a time when scientists enjoyed the peak of postwar public esteem for their contribution to the victory in World War II, their normal role in the Baruch plan negotiations did not extend beyond technical advice. Apparently, the scientific approach with its emphasis upon objective, experimentally demonstrable fact did not provide a useful paradigm for the international negotiators.

The characteristics of the proposed control plan, as enunciated by the scientists of the Lilienthal Board and those of the UNAEC Scientific and Technical Committee, suggest that the authors were thinking in terms of an ideal situation. Many of the features of this plan, while considered necessary to an effective control system, presented notions which were totally unacceptable to the Soviet Union. A possible alternative in the U.S. policymaking process might have been to determine the basic technological and political requirements for an effective control system which each side would accept, and then to try to establish some common ground between the two positions. With this process as a starting point for the negotiations, perhaps the discussions could have proceeded to elaborate on the control system in such a way as to explore a variety of proposals and arrive at the proper combination of technological and political characteristics which would provide both an effective system, and one reasonably acceptable to all concerned. A willingness to proceed on this basis might at least, in the Baruch plan negotiations, have emphasized good faith and signalled an understanding that each side had its special political problems to resolve.

