Chapter VII

The Search for Political Compromise

I

Revamping the Western Position

The failure of Technical Working Group II to achieve agreement marked the conclusion of one phase in the Geneva Conference. The attempt to restore the agreed basis for the negotiations through the mechanism of technical talks had failed. If the negotiations were to be advanced, new mechanisms would have to be tried. Thus the failure of TWG II touched off an effort to by-pass the technical disagreement, which continued until the Geneva Conference adjourned sine die on January 29, 1962.

Although this effort was principally diplomatic in nature and was pursued mainly on a diplomatic level, it continued to have a large technical component. This was inevitable since the dispute concerned technical issues, but it was also a product of the Western attraction for the concept that political agreements could be achieved through efforts at the technical level. Rather than technical talks, hopes came to be pinned on technical research, conducted by the individual governments themselves and perhaps jointly. Research might yield ways of satisfying both the Soviet demand for a comprehensive treaty and the Western demand for “adequate control.” Moreover, research was a neutral device. One could be for research, just as one could be for technical talks, regardless of one’s position on the wisdom of a test ban treaty. By stressing research one could avoid political disputes and decisions. Signs of this developing attitude were already evident in the speeches of the Western delegates—especially Sir Michael Wright’s—at the session of the Geneva Conference when Technical Working Group II reported. However, research would take time. Meanwhile, compromises would be necessary on the political level.
The Decision to Continue the Moratorium

The first decision that the United States had to take related to the moratorium on testing nuclear weapons. As will be recalled, in August the United States had announced that it would continue the voluntary suspension until December 31, 1959. The British had taken a different position; they had declared that they would continue the moratorium as long as the negotiations continued; therefore this issue did not arise for them.

In late December, President Eisenhower summoned a group of advisers to Augusta, Georgia, to discuss what action the United States should take. The failure of TWG II had strengthened the convictions and the case of those who questioned the wisdom of continuing the moratorium. They were now even more convinced that it would be difficult to detect and identify clandestine explosions of small nuclear weapons. The experience of TWG II had also served to underscore the reservations which many had about Soviet intentions. No one, however, went farther than to argue for a resumption of testing underground and possibly in outer space. That no one urged resuming atmospheric testing reflected both the extent to which public opinion, or fear of an adverse public reaction, could inhibit United States policy, and the conscience of American policy-makers.

On the other side, it was argued that broad East-West relationships were moving gradually toward a détente. General disarmament talks were to be resumed again for the first time since 1957 when the Ten-Nation Disarmament Committee would meet in Geneva in March 1960. Even though the Coolidge Committee had been unable to formulate a new American negotiating position, the United States looked forward to these talks. There were prospects for a summit meeting later in the spring or early summer, and it seemed likely that President Eisenhower would make a trip to the USSR sometime thereafter. Moreover, more progress had been made in the Geneva Conference than in any other arms control negotiation since the Second World War. By this time the three states had agreed to a preamble, seventeen articles, and an annex to a treaty, an unprecedented achievement.

To compound the matter, it was not at all clear what the effects of any given American policy would be on the Soviet Union; for
example, whether continuing the moratorium would make the USSR more or less willing to negotiate.

The result was a compromise embodied in a declaration and inaction with regard to the substantive issues at stake. On December 29, 1959, President Eisenhower issued the following statement:

Although we consider ourselves free to resume nuclear weapons testing, we shall not resume nuclear weapons tests without announcing our intention in advance of any resumption. During the period of voluntary suspension of nuclear weapons tests the United States will continue its active program of weapon research, development, and laboratory-type experimentation.¹

He prefaced this statement by saying that the prospects for a test ban agreement had been injured by “the recent unwillingness of the politically guided Soviet experts to give serious scientific consideration to the effectiveness of seismic techniques for the detection of underground nuclear explosions,” and he characterized the Soviet annex to the Technical Working Group II report as “intemperate and technically unsupportable.” On the other hand, no decision was made to ready test sites, nor were budgetary allocations for such activities increased. Administration officials explained the President’s statement to the press as a “bargaining maneuver.”²

In his account of the negotiations, Sir Michael Wright has argued that by choosing the course that it did, the “Eisenhower Administration got the worst of both worlds.”³ He maintains that while the United States did not in fact resume testing, “the statement enabled the Russians to claim that the West had been the first to speak of resuming.”

It is difficult to know how the Soviet Union interpreted the American decision. Although the Eisenhower statement was criticized in the Soviet press and in statements by Soviet officials, the criticism was relatively restrained, and on January 3, 1960, Chairman Khrushchev reiterated his pledge that the USSR would not resume testing nuclear weapons unless the West did. He repeated this pledge eleven days later in a speech before the Supreme Soviet of the USSR, and in so doing pointed out that any state

¹Geneva Conference, p. 413.
³Sir Michael Wright, Disarm and Verify, p. 126.
that resumed testing nuclear weapons would find it difficult to reconcile its decision with the decisions of the United Nations. In the same speech he acknowledged that it might be possible to camouflage some underground nuclear explosions and that others would be difficult to detect. Regardless of these difficulties though, he argued that if an agreement were signed, it would be fulfilled: "Should any side violate the obligations to which it has committed itself, the instigators of such violations will cover themselves with shame, and they will be condemned by people of the world." Curiously, a few days earlier, on December 30, 1959, Pravda charged that the United States had already violated the moratorium by setting off underground atomic explosions.

Chairman Khrushchev's Supreme Soviet speech also contained other elements of some significance for the test ban negotiations. Most notably, he gave figures on Soviet troop strength over the years, and proposed that the current total of 3,623,000 be reduced by a third. The Supreme Soviet promptly enacted legislation to implement this suggestion. In the West this move was alternatively interpreted as indicating either a desire for détente, or the modernization of the Soviet armed forces. To a certain extent, probably both interpretations had elements of validity. In any case, the move would mean that as their conventional capacity lessened, Soviet forces would become increasingly reliant on nuclear weapons. In a certain sense, Khrushchev's speech paralleled Dulles' massive retaliation pronouncement six years earlier. Indeed, Khrushchev spoke of the Soviet Union having sufficient modern weapons:

\[
\ldots \text{that should any madman launch an attack on our state or on other socialist states we would be able to literally wipe the country or countries which attack us off the face of the earth.}^{5}
\]

Clearly, the Soviet Union was moving in the direction of adopting a doctrine of deterrence.

The United States' Proposal for a Phased Treaty

The decision about the moratorium was a relatively simple one. Formulating a new Western negotiating position in view of the

\[4^\text{Documents on Disarmament, 1960, pp. 4-15.}\]

\[5^\text{Documents on Disarmament, 1960, p. 14.}\]
outcome of Technical Working Group II was a more complex issue and one which required more time. In fact, the United States was unable to present a new position until February 11, 1960, over four weeks after the Geneva Conference had resumed. Meanwhile, the Conference lagged. Ambassador Wadsworth pointed out that the United States' position would have to be based on the conclusions of the American expert delegation to TWG II; any treaty which was not so based would clearly be rejected by the Senate. Mr. Tsarapkin countered by pointing out that the scientific position advanced by the Western scientists would leave large numbers of events eligible for inspection, and then went on to say that the USSR might ease its concept of criteria defining events eligible for on-site inspection if the West would accept the Soviet proposal for an annual quota of on-site inspections. The West would have to agree to the quota concept, however, before the criteria could be formulated. He pointed out that the Control Commission would be able to conduct research, and that improvements in the capability of the detection and identification system presumably would result. He also argued that in any case there would be no on-site inspections until the control system was completely installed; that is, for a year or two after the treaty entered into force. Several days later, though, Mr. Tsarapkin allowed that the real problem with violations, if indeed there would be a problem, would relate to underground explosions, that a violator would not attempt to test in other less covert environments.

Finally, on February 11, the United States tabled a new negotiating position. Although the terms of the American proposal were not publicly released until after their presentation in Geneva, they were in large measure revealed and discussed in the press and other mass media long before their presentation to the Conference. In part, this was inevitable, since the new American proposal was derived rather logically from past American positions, particularly President Eisenhower's suggestions of April 13, 1959, and from the outcome of Technical Working Group II. That the new proposal was telegraphed in advance was also the result, though, of the American decentralized processes of decision-making.

6GEN/DNT/PV. 152, pp. 4-5, 20.
7Ibid., pp. 8, 12, 19.
8GEN/DNT/PV. 168, p. 19.
The American proposal was presented verbally; no treaty language was tabled. In essence, it provided for a phased treaty, testing nuclear weapons would be prohibited in those environments where in the American view control was feasible, and the prohibition would be extended as control could be extended. The proposal provided for the immediate prohibition of testing in the atmosphere, underwater, "in outer space up to the greatest height with respect to which agreement can be reached on the installation of effective controls," and underground "down to the lowest limit of size or threshold" which the United States felt could be adequately controlled. As an illustration, and as a proposal, the United States suggested a threshold of magnitude 4.75 on the unified magnitude scale. With respect to on-site inspection, the United States presented two alternative schemes, depending on whether or not agreement could be reached on criteria. Both, however, envisaged actual inspection of only a fraction of the unidentified events, the choice to be determined by the "other side." Thus the proposal involved acceptance in principle of the concept of a numerical quota of on-site inspections. If agreement were reached on the criteria proposed by the American delegation to Technical Working Group II, thirty percent of all unidentified events would be subject to inspection, otherwise twenty percent of all events located by the system would be eligible. The United States estimated that with a threshold of magnitude 4.75 and with control posts initially only on the territories of the three nuclear powers, the application of either formula would result in about twenty on-site inspections in the Soviet Union in an average year. The United States also estimated that the number of comparable events in the United States and the United Kingdom together would be approximately the same. A higher threshold would result in fewer inspections, and a lower one in more. Ambassador Wadsworth stated that the United States would be willing to have the quota fixed in numerical rather than percentage terms, but in that instance the quota would have to be subject to revision at least annually and it should be determined by applying "the agreed percentage to the number of events which has actually occurred in the previous period." In presenting the new American position, Ambassador

See GEN/DNT/PV. 170, pp. 3-9.
Wadsworth stressed the dynamic nature of the phasing concept, and proposed that the three countries institute a "program of joint research," with the aim of moving toward a comprehensive treaty as rapidly as possible. The results of the research would be introduced into the control system as rapidly as "they had reached a technologically useful state." This would allow the parties to the treaty to consider the extent to which each advance might permit moves toward a comprehensive treaty.

The new American proposal was an attempt to reset the requirement of "adequate" control, but at the same time to satisfy the Soviet demand that the number of on-site inspections be limited. In addition, since it implicitly allowed the possibility of testing some nuclear weapons, at least temporarily, it was satisfactory to those who had always felt, or had come to feel, that American security interests demanded this.

It was this last aspect which drew the most critical questions from Mr. Tsarapkin. He immediately asked whether or not the treaty would prohibit nuclear tests underground that would register below the 4.75 seismic magnitude threshold, and if it would not, if there would be a moratorium on such tests. He also asked if all tests in outer space would be prohibited. After receiving Ambassador Wadsworth's negative replies, and hearing his admission of lack of full instructions concerning outer space, Mr. Tsarapkin charged that the new American proposal was an invitation to renew the nuclear arms race; that the nuclear powers would strive to improve their capabilities and that non-nuclear powers would attempt to gain nuclear status. Ambassador Wadsworth denied the second point by arguing that only the countries that were already nuclear powers had sufficiently advanced technology to create devices or weapons with low enough yields so as not to violate the threshold. Mr. Tsarapkin also criticized the concept of expressing the threshold in terms of seismic magnitude, arguing that, as Technical Working Group II had indicated, determination of magnitude was a controversial issue. Finally, he alleged that, American assertions to the contrary notwithstanding, an international control system was not necessary to detect those tests covered by the American proposal, but only for a comprehensive test ban. Although his remarks

10 Ibid., pp. 9-10.
were impromptu and did not constitute a formal Soviet reaction, they certainly presaged a less than warm reception for the American proposal.

II

Differences Narrow

The French Nuclear Tests
The formal Soviet reply did not come until several days later; meanwhile an event occurred which had significant implications for the test ban negotiations, although its immediate effect was imperceptible. On February 13, 1960, refusing to heed the General Assembly’s recommendations, France detonated an atomic device with an estimated yield of from 60 to 70 kilotons. Interestingly, this development was not mentioned in the Geneva Conference until March 2, and then only implicitly when Ambassador Wadsworth referred to what had previously always been called the “4th country problem,” or the “nth country problem,” as the “5th country problem.” The Soviet Union did not mention the fact that France had tested a nuclear device until September 29. By that time, France had detonated a second nuclear device, and it would detonate a third before the year was out. Clearly, with each passing day the “nth country” problem would become more difficult, and for that reason, the question of a test ban more complicated.

The Soviet Proposal for Temporary Criteria

On February 16, Mr. Tsarapkin presented the USSR’s formal response to the American suggestion for a phased treaty. In a rather moderate speech he labeled the suggestion “unacceptable” because the USSR favored a comprehensive treaty; but he went on to suggest that it might be possible to surmount the difficulties in which the Conference was enmeshed by exploring a concept which had been advanced by the United Kingdom on January 15, that is, to have temporary criteria for the initiation of on-site inspections. He then proposed temporary criteria which would apply for an initial period of from two to three years. These provided that an event would be eligible for inspection if it were localized on the

12GEN/DNT/PV. 172, pp. 3-7.
basis of data from several surrounding stations within an area of approximately 200 square kilometers. If the control posts were situated only on one side of the event, as for example an event in a coastal area, a larger area would be allowed. An event would be ineligible for inspection if (1) its depth of focus were established as below 60 kilometers, (2) its epicentral location were established to be in the deep ocean and it were not accompanied by a hydroacoustic signal, (3) it were established within 48 hours as the foreshock of an earthquake, or (4) if it were established as the aftershock of an earthquake. Mr. Tsarapkin claimed that these criteria represented the area of agreement between the Western and Soviet scientists, and in large measure they did, except that the concept of first motion was completely omitted. All events regardless of their seismic magnitude would be eligible for inspection, the actual number of inspections to be fixed according to the Soviet quota proposal, but the USSR continued to be unwilling to indicate any specific figure for a quota. During the period that the temporary criteria were in effect, Mr. Tsarapkin envisaged that the Soviet and Western scientists “would continue the joint study of the question of criteria” with the aim of agreeing upon a complete and more rigid set of criteria which would replace the temporary criteria. Thus the Soviet Union accepted the principle of “joint research,” and this was confirmed in subsequent questioning. The following day Mr. Tsarapkin stated that the research program could begin immediately after the signature of the treaty—that is, before its coming into force—and that nuclear devices would not be required in the program, that chemical explosives would be sufficient.

Even though Mr. Tsarapkin denied it, the Soviet proposal seemed to acknowledge some of the technical difficulties which the Western scientists had striven so painfully to present in Technical Working Group II. In any case, the two sides appeared to be moving closer to agreement, and on March 2, Ambassador Wadsworth pronounced the proposed Soviet criteria “generally acceptable technically.” The American reservation applied principally to the area of localization, which Ambassador Wadsworth argued was too small, but also to the identification of foreshock. In addition, he

13GEN/DNT/PV. 173, p. 8.
14GEN/DNT/PV. 180, p. 5.
maintained that the proposal would only be acceptable if some arrangement could be worked out so that if agreement were not reached on more rigid criteria during the initial period, the organization would not be left without criteria. However the divergence between East and West on broader issues was still great, and the greatest portion of Ambassador Wadsworth's speech was actually devoted to pointing these out. In sum, the United States continued to believe that with existing technology it would be impossible adequately to control low yield underground explosions, and thus that for the time being a comprehensive treaty was out of the question. The Soviet Union, on the other hand, continued to insist on a comprehensive treaty, and held to its position that on-site inspections could occur only within such a context.

The Soviet Proposal for a Phased Treaty and a Moratorium

The next attempt to narrow the gap between the two sides was also advanced by the Soviet Union, although its origins were more diffuse. On Saturday, March 19—just in time for the Sunday editions—Ambassador Tsarapkin announced that the USSR would be willing to conclude a treaty "on the cessation of all nuclear weapon tests in the atmosphere, in the oceans, and in outer space, and of all underground tests which produce seismic oscillations of magnitude 4.75 conventional units or above." He stated that the Soviet government would also agree to the American proposal "to institute a programme of joint experiments by the Soviet Union, the United States, and the United Kingdom," with respect to unidentified events below magnitude 4.75 conventional units, "on the understanding that all parties to the treaty assume at the same time the obligation not to carry out during that period any nuclear weapons tests producing seismic oscillations of magnitude 4.75 conventional units or below." In other words, the partial treaty would have to be accompanied by a moratorium covering the tests which were not banned. Apparently the USSR felt that the moratorium should be part of the treaty. Senator Humphrey had made a similar suggestion several months previously in a speech in Pontiac, Michigan, and the idea was explored verbally in guarded fashion by the principal delegates to the Geneva Conference several

15GEN/DNT/PV. 188, p. 13.
days prior to the Soviet proposal. Sir Michael Wright had indicated that he would advance the concept to the United Kingdom government.

The Soviet proposal was widely regarded as a major move. Coming as it did a few days after the opening session of the Ten-Nation Disarmament Committee, and with a summit meeting scheduled within two months, it could be interpreted as an attempt to secure a détente. On the other hand, it involved a continuation of the unpoliced moratorium.

Formulating a Western Response

The first Western response was to probe the precise meaning and implications of the Soviet proposal. Some questions were put to Mr. Tsarapkin immediately after he made the proposal. These were repeated in a more formal fashion and others were added at the next session of the Geneva Conference on Monday, March 21. The first group of questions related to the “joint research programme” and the obligation to refrain from testing. They concerned the length of the program and whether or not the two aspects would be concurrent. Ambassador Wadsworth also asked what would happen at the end of the period, and specifically, “if, in the opinion of the scientists, the controls were still not completely effective, would the obligation not to test nevertheless persist?” Ambassador Wadsworth was also concerned about the scope of the research program, particularly whether it would be limited to the problem of criteria or would be broader.

A second group of questions concerned the number of on-site inspections and the threshold of magnitude. Ambassador Wadsworth asked if the Soviet Union accepted the Western proposal to use the unified magnitude scale. He also asked if the Soviet Union accepted the threshold of magnitude 4.75 and if there would be a quota for inspections above the threshold, below the threshold, or for the entire range. A related query concerned the Soviet attitude toward the American proposal for simplified criteria.

A third area of questions concerned high altitude and outer

---

16See the interchanges between Tsarapkin and Popper (US), GEN/DNT/PV. 183, pp. 11-13; GEN/DNT/PV. 184, pp. 10-18; and the remarks by Wright, GEN/DNT/PV. 185, p. 3.

17GEN/DNT/PV. 189, pp. 5-8.
DIPLOMATS, SCIENTISTS, AND POLITICIANS

space. Since the Soviet proposal envisaged a complete prohibition on testing in these environments—which the United States phased treaty proposal of February 11 did not necessarily—Ambassador Wadsworth inquired about what type of a control system was "proposed for the installation in the high-altitude environment, what elements it would contain and at what intervals such elements of the high-altitude system would be installed." He also wanted to learn what "would be done about high-altitude or cosmic space tests which could not be identified by the initially installed system." Thus he raised a question which American policy-makers themselves had previously evaded.

Finally, Ambassador Wadsworth asked:

As regards the underground environment, in the event that effective control of small underground explosions proved impossible and if the proposed temporary prohibition against such explosions lapsed, would the remainder of the treaty continue in effect?

Given the ideas which many in the American scientific community held about the difficulty of detecting underground nuclear explosions this was perhaps the most crucial question. The last of the non-nuclear blasts in the Cowboy series had been fired on March 4 and the evaluation of the series substantially confirmed Albert Latter's theories concerning decoupling.

Mr. Tsarapkin's responses followed the same order as Ambassador Wadsworth's questions. He repeated his previous statements that the "joint research programme" could begin immediately after the signature of the treaty. In the Soviet view the program should be drafted by the Preparatory Commission. Mr. Tsarapkin stated that the USSR felt that, although research would be a continuing aspect of the Control Organization, a suitable length for the specific program aimed at events below the threshold of magnitude 4.75 would be four or five years, and that the question of the moratorium and the research program were "closely interrelated." Mr. Tsarapkin asserted that the Soviet government did not admit the possibility that the research program might not be successful, but if it did take the most pessimistic view, it felt that the failure of the program "should not automatically release the parties to the treaty from their obligations regarding the moratorium
and should not mean that the treaty would terminate or be liquidated.” The governments concerned would have to discuss the situation and agree on further measures. With respect to the scope and nature of the research program, Mr. Tsarapkin asserted that experiments in the program should be conducted with “conventional chemical detonations, not nuclear weapons.”

Concerning the second group of questions, the Soviet view was that the quota of on-site inspections, which would have to be determined on the basis of a political compromise, would apply both to events above and below the threshold; thus the issues of determining the magnitude of specific events would not arise. The quota would be revised in the light of the experience of the Control Organization in accordance with the periodic review article, therefore, for the first time, two years after the entry into force of the treaty, and subsequently on an annual basis.

With respect to high altitude and outer space, Mr. Tsarapkin asserted that there should be a total prohibition on testing regardless of the number or the schedule of installation of control techniques.

The answer to the last question had been given implicitly in the answers to the first group. In essence, it was that the prohibition on testing nuclear weapons should be permanent regardless of the outcome of the research program.

Simultaneously, discussion and debate began within the United States and the Western alliance about what the Western response should be. The extent to which the detailed questions raised by Ambassador Wadsworth and the responses given by Mr. Tsarapkin entered into the decision-making process is not clear. Many of the arguments were those which had been visible throughout the negotiations. Moreover, at his news conference on Friday, March 25—four days after the interchange between Wadsworth and Tsarapkin and two days after the Committee of Principals framed its recommendation—Secretary of State Herter stated that the Department had not received all of Mr. Tsarapkin’s answers.18 Of course their general nature had been reported in the press.

On Tuesday, March 22, Senator Clinton P. Anderson, then

Chairman of the Joint Committee on Atomic Energy, declared that the Soviet proposal "has the appearance of a phony." It was his view that the Soviet proposal was an attempt to secure a prohibition against all testing, regardless of whether or not the agreement could be controlled. In his picturesque terms:

Again the United States is asked to buy a "pig in the poke." We are asked to forego testing and to accept a totally inadequate inspection system. We are asked again to agree to a system based largely on trust of the Soviets rather than real controls.

John A. McCone, Chairman of the Atomic Energy Commission, was known to hold similar views. To these men, the acceptance of the Soviet proposal would endanger American security because of its failure to provide adequate control.

Another force acting as an undercurrent, but in tandem with this interpretation, was the increasing pressure in the United States to resume the testing of nuclear weapons. Perhaps Freeman J. Dyson, a physicist and professor at the Institute for Advanced Study at Princeton, articulated the case most clearly. His views were advanced in an article entitled "The Future Development of Nuclear Weapons," published in the April 1960 issue of Foreign Affairs, which was released in mid-March. In his article, Professor Dyson stressed particularly the importance and possibility of a fission-free weapon, or a neutron bomb, which would not produce fallout. He also asserted that complete control over a ban on testing nuclear weapons would be impossible without almost unlimited inspection rights.

The adverse reaction in the United States to the Soviet proposal so alarmed Prime Minister Macmillan that he hastily arranged to fly to the United States to confer with President Eisenhower about the Western response. He regarded the Soviet proposal as an extremely favorable action. Many in the United States also inclined toward this position. The day after Senator Anderson

issued his pronouncement, Hans Bethe released a statement in which he viewed the Soviet proposal favorably.\textsuperscript{22} Senator Hubert H. Humphrey also made a lengthy speech in the Senate that day describing in detail the progress of the Geneva Conference and relating the Soviet proposal to his Pontiac speech and the United States suggestion for a phased treaty.\textsuperscript{23} He was well informed, among other reasons because his Subcommittee on Disarmament had held a hearing on the technical problems involved in the negotiations on February 4, 1960. He pointed out that the Soviet proposal differed from his suggestion in that the number of on-site inspections was not specified and the proposed moratorium was four to five years instead of two. He also read into the record a detailed statement of the Advisory Committee on Science and Technology of the Democratic Advisory Council, which emphasized the importance of a test ban agreement. In view of all of these factors, his conclusion was that the Soviet proposal should be regarded "as a significant indication that the USSR may be willing to accept the necessary number of inspections to monitor a test-ban treaty and to work for the improvement of the control system."

Following his speech, Senators Humphrey, Anderson, and Case engaged in a low-keyed debate about the progress of the test ban talks. Perhaps the most interesting point was Senator Humphrey's insistence that from twenty to thirty on-site inspections would be necessary annually in the USSR, and Senator Anderson's reply that in informal conversations Soviet delegates had mentioned the possibility of two or three.\textsuperscript{24} The Soviet Union still had not presented a concrete figure for the quota in the Geneva Conference, and it would not until July 26, 1960. Clearly, this issue was a factor which had to be considered in viewing the Soviet proposal.

A closed debate raged within the Administration, although the views and positions were not significantly different from those expressed in the public arena. The Committee of Principals held meetings on March 22 and 23.\textsuperscript{25} Chairman McCone argued force-

\textsuperscript{24}Ibid., p. 6362.
\textsuperscript{25}See the account of these two meetings in Chalmers M. Roberts, "The Hopes and Fears of an Atomic Test Ban," The Reporter, Vol. XXII, No. 9, pp. 20-23.
fully against accepting the Soviet proposal. James H. Douglas, who had recently been promoted from the Secretaryship of the Air Force to Deputy Secretary of Defense, and who was sitting in for Secretary of Defense Thomas S. Gates, Jr., made the strongest case for a favorable response. He argued that any agreement which would "open up" the Soviet Union by stationing international inspectors within the USSR, and thus break down Soviet secrecy and insularity, would be more valuable to the United States than any gains from continued testing, and he felt that the proposal seemed to offer the possibility of such an agreement. Mr. Douglas' arguments represented a considerable shift in thinking in the Department of Defense. Although he was perhaps the most articulate exponent of the new views, they were apparently subscribed to in varying degrees by the Secretary and other senior officials. George Kistiakowsky, the President's Special Assistant for Science and Technology, supported his stand. Allen Dulles made the point that current intelligence estimates continued to indicate that the United States held a lead in nuclear weaponry, and thus that a freeze on development would be to its advantage. By the end of the second meeting a recommendation urging a conditional favorable response to the USSR was framed. Messrs. Douglas, Kistiakowsky, Dulles, and Herter supported this recommendation; Chairman McCone opposed it. The President accepted and approved the recommendation. At this point, he strongly favored attempting to achieve a nuclear test ban.26

Thus by March 26 when Prime Minister Macmillan arrived in the United States, his trip was rather redundant. Nonetheless, it allowed joint consultation, which had not occurred prior to this point, and a display of Western unanimity.

*The Eisenhower-Macmillan Joint Declaration*

On March 29, after meetings in Washington and Camp David, President Eisenhower and Prime Minister Macmillan issued a joint declaration. The most important part of this declaration, and the Western response to the Soviet proposal, was the statement that the President and the Prime Minister had agreed that as soon as a test ban treaty was signed:

---

26Robert Gilpin feels that the President's desire was the strongest factor in the decision. See *American Scientists and Nuclear Weapons Policy*, pp. 249-50.
and arrangements made for a coordinated research program for the purpose of progressively improving control methods for events below a seismic magnitude of 4.75, they will be ready to institute a voluntary moratorium of agreed duration on nuclear weapons tests below that threshold, to be accomplished by unilateral declaration of each of the three powers. In order to expedite progress, the President and the Prime Minister have agreed to invite the Soviet Government to join at once with their two Governments in making arrangements for such a coordinated research program and putting it into operation.27

Several features of the statement are worthy of note. First, this was the first mention of a "coordinated research program." Previously the adjective "joint" had always been used. The developing differences between the Soviet Union and the Western powers concerning whether chemical or nuclear explosions would be required were responsible for this shift in terminology. American scientists of almost all persuasions were convinced that nuclear detonations were necessary for the research program, and the Administration was determined not to be put in a position whereby the Soviet Union could block this. Secondly, the statement implied that the research program should begin immediately, not after the signature of the treaty. Finally, and perhaps most importantly, the moratorium would be voluntary and accomplished by unilateral declaration. This would retain an element of freedom of action, and also meet the constitutional problem posed by President Eisenhower's departure from office in January 1961 (actually the uncertainty that this involved was soon removed by pledges from the major Presidential candidates that they would honor a moratorium commitment). Also, the duration of the moratorium was left to be determined, which implied, as various statements by officials had, that the West would not accept a period as long as from four to five years.

With the issuance of this statement the positions of the three parties to the Geneva negotiations moved significantly closer together, and the prospects for a test ban treaty appeared to rise sharply. In the following days the world press contained numerous speculations that the remaining unresolved issues could be solved

at the forthcoming meeting of heads of governments, now scheduled to open May 16.

The diplomats at the conference table seem to have shared these expectations. In the fifteen meetings that were held between March 29, the date on which the statement was issued and May 12, the day the Conference recessed for the summit meeting, they worked hard, as Ambassador Wadsworth put it, "to clear away as much underbrush as possible." This consisted mainly of attempting to settle minor issues and clarify major ones. Significant progress was made on achieving agreement concerning the Annex on Privileges and Immunities, and the differences with respect to other aspects of the Control Organization were defined as precisely as possible. Of course, major effort was devoted to clarifying the Eisenhower-Macmillan statement and its exact relationship to the Soviet proposal of March 19. It was not until May 3 that the USSR conditionally accepted most aspects of the Western position.

Meanwhile, on April 6, Ambassador Wadsworth had discussed in general terms the type of "coordinated research programme" that the United States felt should be carried out, and six days later he had proposed that scientists from the three states be brought to Geneva to advise the Conference on the technical aspects of the proposed research program. This suggestion had been accepted by the Soviet Union on April 14, and on May 3 when the USSR broadly accepted the new Western position, it also agreed that the Seismic Research Program Advisory Group, as it came to be called, should hold its first session May 11. Ultimate responsibility for the research program was to rest with the Geneva Conference.

A Basic Consensus?

By May 12, when the Conference recessed, it can fairly be said that there was a mutually acceptable framework for a test ban treaty. Leaving aside issues affecting the nature of the control organization, which will be treated in a later chapter, the differences stemming from technical aspects of the matter appeared not to be insurmountable, and scientists from the three sides were already

---

28 See Sir Michael Wright, _Disarm and Verify_, pp. 127, 137.
29 GEN/DNT/PV. 198, p. 8.
30 GEN/DNT/PV. 202, pp. 3-6.
31 GEN/DNT/PV. 196, pp. 3-4.
The Search for Political Compromise

at work on the research problems. Seemingly in recognition of this, on April 1 the Conference agreed that its verbatim records through February 29, 1960, and adopted portions of the draft treaty should be released on April 19 and that thereafter verbatim records would be released monthly with a one-month time lag.\textsuperscript{32} This move also satisfied a long-standing complaint of the Joint Committee on Atomic Energy about the secrecy of the negotiations.

The Soviet Union had agreed that the moratorium could be accomplished by a series of unilateral declarations by the three governments and that as a part of the planned research there might be "a strictly limited number of joint underground nuclear explosions."\textsuperscript{33} The Western powers had agreed that the quota of on-site inspections should apply to events both above and below the magnitude 4.75 threshold. The unresolved issues related to the size of the quota—(the Soviet Union had not yet tabled a specific proposal),—the duration of the moratorium, and what obligation the parties to the treaty would have at the end of the moratorium if the research program were not completely successful in improving the capability of the control network. The Soviet Union continued to argue that the moratorium should be from four to five years, and cited an October 29, 1959, statement of John A. McCone in which he had said that it would take from four to five years to create a reliable control system. In any case, Mr. Tsarapkin insisted that the research program and the moratorium should be coterminous. The Western representative on the other hand argued that four to five years was too long a period for the moratorium. On the other issue, the USSR also maintained its position that at the expiration of the moratorium the parties to it should not be "automatically released" from their obligations. The Western powers on the other hand felt that at the end of the moratorium each of the three powers should be "free to take any position that it deems necessary." Also, the Soviet Union continued to talk about and insist on a "joint research programme" while the Western representatives used the phrase "coordinated research programme."

However, even though the unresolved issues of a technical nature may have seemed relatively minor, some involved fairly

\textsuperscript{32}GEN/DNT/PV. 192, p. 6.
\textsuperscript{33}GEN/DNT/PV. 202, p. 6.
deep-rooted disagreements. The West was determined not to agree to permanent measures of arms control unless they could be policed with a high degree of assurance. Thus the length of the moratorium and what happened at its expiration were crucial issues for Western policy-makers. So too was the question of the adequacy of the research program, and consequently the desire not to allow the other side to have veto powers. The USSR had other fears. Mr. Tsarapkin expressed some of these in explaining the Soviet argument that at the expiration of the moratorium the parties to the treaty should meet to consider the situation.

The meaning of this proposal is perfectly obvious. It is meant to preclude obstruction by any party who, in the absence of such a provision in the treaty, might under various pretexts prevent positive results from being achieved by the research and then, on the ground that the agreed time-limit for carrying out the research programme had expired, declare its freedom of action and resume testing.\(^{34}\)

If the USSR assumed that within the limits of a politically acceptable control system there would always be some threshold of detectability, and that it might be extremely difficult and perhaps even impossible to compensate for such degradations in control as posed by decoupling, the Soviet fears could be well founded. In any case, the USSR had the development of the theory of decoupling as a backdrop of immediate history. The desire to exercise a high degree of control over the research work would fit with this interpretation, as would pressure for a lengthy moratorium.

**Dissents From Interested Parties**

These divergencies, however, remained undercurrents. The most salient signs seemed to indicate rapid and swift progress toward a test ban. As a result, those interested parties which might be affected by a test ban began to raise their voices. On April 7, President de Gaulle reiterated the position that France would only abandon its nuclear weapons development program if the three nuclear powers destroyed their nuclear weapons.\(^ {35}\) He repeated this

\(^{34}\)GEN/DNT/PV. 192, p. 9.

several days later during a trip to the United States in an address before a Joint Session of Congress. His position was underlined by the detonation of a second French nuclear device on April 1. Another "nth country" also made its position known. On April 10, Premier Chou En-lai stated that Communist China would not be bound by any accord which it did not sign. At a news conference about a month later, he stated that the People's Republic of China would only take part in a disarmament conference if it were recognized by the other participating states. These statements had ominous implications for the prospects of a general test ban and also for the Sino-Soviet alliance, coming as they did in the midst of the developing controversy between Communist China and the USSR in which differences concerning disarmament figured prominently.

*Joint Committee Hearings: The Bethe-Teller Debate*

There were stirrings within the United States too. On April 11, Senator Clinton Anderson announced that two subcommittees of the Joint Committee on Atomic Energy, meeting jointly, would hold public hearings, starting April 19, on the technical aspects of the detection and inspection controls of a nuclear weapons test ban. The hearings were carried on for four days and most of the scientists who had participated in one way or another in the test ban negotiations and others as well testified. Although the Chairman of the hearings, Representative Chet Holifield, strove valiantly to confine the discussion to technical matters, questions concerning the wisdom of past and possible future negotiating positions were inevitably raised. On these occasions, the positions which were by then well known were repeated. Perhaps Edward Teller and Hans Bethe portrayed best the two extremes among the scientists that testified, the former displaying great caution concerning the wisdom of a test ban and the latter controlled enthusiasm. A variety of

38*Documents on Disarmament, 1960*, p. 87.
40For an extensive analysis of these hearings see Earl H. Voss, *Nuclear Ambush*, pp. 395-456.
estimates and judgments were involved. For Teller, the development of tactical nuclear weapons was important and promising, while Bethe viewed it as of marginal utility and as possibly being technically difficult. Teller was pessimistic about the possibility of improving the control system, while Bethe was optimistic. Teller regarded the decoupling theory as a degradation of great importance for which compensations were unlikely. Bethe, on the other hand, questioned the practicability of decoupling, particularly for large detonations in the range of tens of kilotons, and also felt that the problem could be conquered. Despite this disagreement, however, there was consensus among these two scientists and others on the capabilities of the system recommended by the Conference of Experts; they all estimated it at roughly 19 kilotons for an underground shot which had not been decoupled.

And Some New Suggestions

Other than the Bethe-Teller debate, which was framed more neatly than it had been previously, three elements stand out most in the hearings. The first of these occurred the second day when Richard Latter of the RAND Corporation testified. In the period after Technical Working Group II he analyzed the control system proposed by the Conference of Experts in more detail than anyone previously had, and in the process he experimented with some of its parameters.41 He presented the results of this work to the Committee. No one yet knew how many control posts there would be in the Soviet Union—the issue had not been discussed in the Geneva Conference—but Dr. Latter assumed on the basis of inferences and calculations that there would be 21. If there were control posts only on the territory of the three nuclear powers—21 in the Soviet Union, 14 in the United States, and 1 in the United Kingdom—and assuming a magnitude 4.75 threshold, using earthquake tables, he estimated that this would result in about 173 unidentified events per year in the United States and 53 in the Soviet Union. If 30 percent of these were eligible for on-site inspection, there could be 52 inspections per year in the United States and 16 in the

Soviet Union. If control posts were established throughout the world, as recommended in the report of the Conference of Experts, he calculated that the number of unidentified earthquakes in the United States and the Soviet Union would be reduced to 143 and 28 respectively, and again assuming that 30 percent of these would be eligible for on-site inspection, the maximum number of on-site inspections would correspondingly be reduced to 43 and 8. He also calculated that by modestly increasing the number of control posts within the Soviet Union, especially in the seismic areas, the number of unidentified earthquakes could be reduced even farther. Thus, assuming control posts only in the USSR, the United States, and the United Kingdom, but increasing the number of control posts within the Soviet Union from 21 to 25 would result in there being only 20 unidentified earthquakes each year on Soviet territory. Using the 30 percent figure again, only 6 events there would be eligible for on-site inspection.

The second novel element appeared in Hans Bethe's testimony. He argued that with a large number of control posts and with feasible improvements in seismological instruments, it might be possible to detect even decoupled detonations of as little yield as 20 kilotons. In his estimate, with foreseeable improvements, some 600 control posts would be required in the Soviet Union to achieve this capability. Both of these features are interesting chiefly because they indicate how the technical parameters of the control system could be changed if one were willing to alter the elements of the system. Dr. Latter's testimony illustrated the same point and was also significant because of the low number of on-site inspections involved and the differential between the number required in the United States and the Soviet Union. His figures varied greatly from those being used by the American delegates in the negotiations.

Finally, the Joint Committee hearings were interesting because they brought out in vivid detail how difficult it would actually be to conduct an on-site inspection. On the basis of this a number of Congressmen concluded that the probability of an on-site inspection's detecting evidence of a violation was very close to zero. Their conclusion had ominous implications for the possibility of Senatorial consent to ratification of a comprehensive test ban.

42See ibid., pp. 171-86.
The Opening Atmosphere

The early meetings of the Seismic Research Program Advisory Group, which convened on Wednesday, May 11, 1960, seemed to sustain the general air of optimism. The excitement and tension following Premier Khrushchev's announcement on May 7 that the USSR had captured an American pilot whose U-2 aircraft had been shot down over Soviet territory six days previously seemed to have no effect on the work going on inside the Palais des Nations.

The technical representatives of the three states were generally younger and of lower rank than their counterparts at previous meetings. The American delegation was headed by Frank Press, a seismologist at the California Institute of Technology, and Carl Romney of the Air Force served as Associate Chairman. M. A. Sadovsky, who had attended the Conference of Experts and the two technical working groups, headed the Soviet delegation, and H. R. Hulme, the British delegation. Although the American delegation had not had any special preparation, several members had previously participated in the negotiations at one time or another, and all were deeply involved in Project Vela, the United States research program, final approval of which had been announced on May 7. Since the purpose of SRPAG was to discuss research, this background was probably sufficient preparation. They were, however, instructed to avoid "political" issues, to refer such matters to the diplomatic conference, and to avoid anything that might give the USSR veto power over the United States research program.

The task of the Seismic Research Program Advisory Group seemed fairly clear cut, and since it involved research, this con-

---

43 The other members of the American delegation were: Carlton M. Boyer, Department of Defense; Gerald W. Johnson, Department of Defense; Spurgeon M. Keeny, Jr., Office of the Special Assistant to the President for Science and Technology; Richard Latter, RAND Corporation; Robert C. Scheid, Department of Defense; and M. Carl Walske, Atomic Energy Commission.

44 The other members of the Soviet delegation were Y. V. Riznichenko, O. A. Grinevsky, V. I. Keilis-Borok, I. P. Pasechnik, G. L. Schnierman, and A. I. Ustyumenko.

45 The other members of the British delegation were M. Hill, H. T. Morgan, J. W. Wright, F. Panton, and R. M. Evans.
ference probably elicited more professional enthusiasm from the participating scientists than had any of the others. Also, the meeting appeared to offer the opportunity of proving the contribution of scientific research to the solution of political problems. Dr. Press’s opening comments, when he spoke of the procedures and language of science as being universal and recalled the fruitful results of international scientific cooperation in the research involved in the International Geophysical Year,\(^ {46}\) symbolized the general tone that characterized the participation of the Western delegates in the early meetings. The Soviet scientists also seemed to be somewhat more candid in these sessions than they had been in the past and appeared to share the Western enthusiasm for the scientific character of their task. For example, in a discussion about the American plan to offer improved seismological equipment to seismological stations throughout the world, Mr. Sadovsky said: “We shall also try to use the political situation for the improvement of seismology in general.”\(^ {47}\) The conference could conceivably allow the scientists both to further their own professional interests and to contribute to the reduction of East-West tensions.

At the first meeting, the American scientists gave a comprehensive and detailed exposition of the United States research program. The plans then in effect envisaged various theoretical and empirical studies, including the detonation of approximately 11 nuclear and chemical explosions, some of which would be designed to test Albert Latter’s decoupling theory. Another aspect of the program was the scheme, mentioned above, to re-equip the seismic stations of the world. There was also a plan to establish certain model stations, some equipped according to the recommendations of the Conference of Experts. This would provide the first practical test of a so-called Geneva-type station. The next two meetings were devoted to the presentation of the much more modest British research program and to discussion of the Western plans.

At the fourth meeting, on Saturday, May 14, Y. V. Rizinchenko presented a paper on the Soviet research program. Since it was not presented as the American program was in terms of cost or man-years of activity, it was rather difficult to grasp its exact magnitude. It appeared to be an extensive program, although it

\(^ {46}\)GEN/DNT/SRPAG/PV. 1, p. 3.
\(^ {47}\)GEN/DNT/SRPAG/PV. 5, pp. 62-65.
was clearly not as elaborate as that of the United States. Certain aspects of Mr. Riznichenko's presentation were moreover rather ambiguous. He stated that for the experiments two of the seismological stations in the USSR would be "equipped with the full set of equipment, bearing in mind the recommendations of the Geneva Conference of Experts in 1958 and 1959." Was this or was it not a commitment to construct two Geneva-type stations? His presentation was even more ambiguous on the subject of underground nuclear explosions. At one point he stated: "The systematic recording of seismic waves produced by earthquakes and also by underground chemical and nuclear explosions carried out under different conditions and in different areas of the profile will take place during the years 1960-1963." Later, he said, "... it seems obvious to us at the present time that a certain number of co-ordinated nuclear explosions of definite magnitude or energy will have to be carried out by us," and referred to an earlier statement on this subject by Mr. Tsarapkin. However, in response to questioning on this point, Mr. Sadovsky said that he could not give an answer until the following meeting. It was clear from Mr. Riznichenko's presentation, that the Soviet scientists planned to utilize a number of large industrial chemical explosions as sources of data, and that they would generalize from this data. The Soviet scientists also planned to make extensive use of models. Again in response to questioning, Mr. Sadovsky stated that there would be no experiments in the Soviet Union to test the theory of decoupling. The reasons that he gave were avowedly political, and his statement was almost apologetic. At the following meeting on Monday, May 16, he announced that there would be no nuclear explosions in the USSR and that the references in the Soviet paper were to nuclear explosions envisaged in American program.

What Conclusion?

Although the atmosphere of these early sessions was quite technical and cordial, it was not immediately clear what the out-

48GEN/DNT/SRPAG/PV. 4, p. 12.
50Ibid., pp. 27-30.
51Ibid., p. 56.
52GEN/DNT/SRPAG/PV. 5, p. 21.
come would be. Of course, the joint discussion and criticism of the three programs yielded certain results in itself. As a consequence of Soviet criticisms, the American scientists agreed that some aspects of the United States program should be altered; for example, they thought that the number of temporary stations should be increased and the recording times—that is, the time which a temporary station would occupy a site—lengthened. In addition, there were various informal meetings where problems of methodology were discussed and some agreements reached on matters of technique. However, it was not obvious what the meeting as a collective body could or would recommend. On May 17, the British suggested various forms of cooperation, involving such matters as exchanges of data and personnel and the elaboration of uniform methodology, and these were incorporated into a draft which was submitted by the United States the following day. The principles involved and the documents elaborating these principles were discussed in SRPAG sporadically through May 24.

The Collapse of the Summit Meeting: The Changing Soviet Posture

Meanwhile, events had transpired which would seriously affect SRPAG, and indeed the entire course of the Geneva negotiations. The heads of government of France, the Soviet Union, the United States, and the United Kingdom had agreed to meet in Paris on May 16 to discuss world problems. When the four leaders gathered in Paris, Chairman Khrushchev refused to proceed farther unless President Eisenhower condemned and cancelled all U-2 flights and arranged to have those “guilty” of perpetrating such flights brought to strict account. Since President Eisenhower refused to take such action, the summit meeting collapsed. Whether the Soviet move was attributable to conflicts within the Soviet ruling group among Chairman Khrushchev and his associates, to increasing tensions in Sino-Soviet relations, or to President Eisenhower's assumption of personal responsibility for the U-2 flights and unabashed assertion at his news conference of May 11 that such activities were a “distasteful but vital necessity” when dealing with a closed society such as the USSR, are matters clearly

53GEN/DNT/SRPAG/PV. 7, p. 36.
beyond the scope of this study.\textsuperscript{55} For our purposes the significant issue is that from that point on the attitude of the Soviet Union toward the test ban negotiations appears to have been markedly different from what it had been previously. Annex II on Privileges and Immunities was formally adopted on October 14, 1960, but this was the only treaty language that was adopted after the collapse of the summit. Through the summer of 1960 the USSR made what could be interpreted as a few concessions on other issues, but as early as the fall of 1960, it began to retract positions which it had previously tabled.

\textit{The End of Another Try by Scientists}

The sharpest indication that the Soviet posture had changed and that this would have an impact on the test ban negotiations came on Friday, May 27, eleven days after the date on which the summit conference was scheduled to begin. At the first meeting of the diplomatic conference to be convened after the recess on May 12, Mr. Tsarapkin, after a long review of the history of the negotiations, stated that, "since the Soviet Union has no doubts regarding the validity of the report of the Geneva experts of 1958, it sees no need for undertaking any research or experiments on its own territory."\textsuperscript{56} In other words, there would be no Soviet research program. In addition, Mr. Tsarapkin demanded that Soviet scientists be allowed to participate fully in all steps of any experiments that might be carried on in the West.

This shift caused considerable embarrassment for the Soviet scientists participating in the Seismic Research Program Advisory Group. SRPAG had been meeting on a daily basis through May 25. Then several days elapsed before the final meeting on May 30. At that session, in response to questioning about the Soviet research program, Mr. Sadovsky would only say:

\textsuperscript{55}For a good summary of the speculation which was rampant soon after the event see Richard P. Stebbins, \textit{The United States in World Affairs, 1960} (1961), pp. 83-88.

\textsuperscript{56}GEN/DNT/PV. 206, p. 8. Wadsworth mentions this reversal of the Soviet position in his book, \textit{The Price of Peace}, p. 27, but he somewhat unfairly fails to put it in the context of the collapse of the summit conference.
...the programme of test explosions, not only nuclear but also chemical explosions, is, in our view, linked to the control system. Our view is that if we do not have definite indications that such a system will be set up in the near future, then the programme of test explosions is unnecessary and should not be carried out. We are conducting seismological research in the USSR and apparently this seismological research will continue.\textsuperscript{57}

Obviously, in this atmosphere an agreed report was out of the question. Dr. Press, in particular, argued against separate reports on the ground that "it broadcasts to the world that the scientists have disagreed."\textsuperscript{58} SRPAG therefore agreed on the expediency of individual private reports by each of the three technical delegations to their own diplomatic delegations.

IV

How Near an Agreement?

Remaining Differences

One can only speculate about whether or not the outcome would have been different had not the broader context of East-West relations altered so radically. It is significant though that there were important disagreements from the outset. Eastern and Western scientists had different conceptions concerning the length of the research program, an issue which had important implications for the duration of the moratorium on nuclear testing below the 4.75 seismic magnitude threshold. Also, the American scientists in particular were insistent that there had to be experiments concerning decoupling, while the Soviet scientists were adamantly opposed to this. As early as May 18, it was apparent that the Soviet scientists had serious objections to the American plans for low-yield nuclear explosions.\textsuperscript{59} The United States program included four nuclear explosions of less than 5 kilotons, one of 500 tons and two of 100 tons, and possibly one of 2 kilotons. The first specific objection that the Soviet scientists raised to these shots was to assert they might appear "suspicious" because of the American interest in the

\textsuperscript{57}GEN/DNT/SRPAG/PV. 13, p. 16.
\textsuperscript{58}GEN/DNT/SRPAG/PV. 12, pp. 7-10.
\textsuperscript{59}GEN/DNT/SRPAG/PV. 7, pp. 17-20.
development of tactical nuclear weapons. The American response was that the USSR was certainly entitled to assurance that the shots would not be used for weapons development, but that the precise arrangements for this were beyond the scope of a technical group. The Soviet scientists then argued that with the current state of technology, the prospects of recording seismic signals “at distances which might be of interest for the purpose of the control system” were extremely remote. The views of Western scientists were cited to support this contention. The balance of Mr. Sadovsky’s statement is extremely interesting. He went on to say:

Frankly speaking, nothing has changed so far in this respect, and we are still in a situation whereby we would be completely satisfied if we were to succeed in a relatively short time—succeed in carrying out the views which had been stated with regard to the detection and identification of five-kiloton explosions. We still believe that five-kiloton explosions can be detected and identified, but it seems to us that we should begin precisely by tackling this task. If from the outset we begin to try to tackle not only this task but alongside a second task, that of detecting and identifying much smaller explosions, I am afraid that we shall meet considerable difficulties, and we may fail in the solution of both tasks.

This was perhaps the most candid public recognition on the part of any official Soviet representative in the test ban negotiations of the technical difficulties involved in the detection and identification of underground nuclear explosions. By implication the statement recognized that the technical situation had deteriorated since the summer of 1958 and the Conference of Experts. The statement also clearly implied that there would be a threshold below which nuclear explosions could not be detected.

If the attitude of the Soviet scientists with respect to low-yield nuclear explosions is put alongside their position on decoupling, what they seemed to be saying is that they could not contemplate any experiments which might give proof that certain nuclear explosions could not be controlled without radically altering the

---

60GEN/DNT/PV. 10, pp. 17-20.
61GEN/DNT/SRPAG/PV. 10, p. 47.