

UNITED NATIONS ATOMIC ENERGY COMMISSION, 1946-52:  
POLITICS OF INTERNATIONAL CONTROL OF ATOMIC ENERGY

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A dissertation submitted in partial fulfilment  
of the requirements for the degree of Master of  
Philosophy of the Centre for International Politics  
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NEW DELHI

1978

I am very grateful to Professor Ashok Guha for his many kindnesses and confidence-inspiring words. I am much obliged to Professor K.P. Misra and Dr. B.K. Srivastava for doing well by me in trying times.

I lack words with which to thank my supervisor Mr. M. Zuberi.

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## CHAPTER I

THE STOLEN FIRE OF THE GODS

The dropping of the atomic bomb on Japan — Its impact on world public opinion — Bohr's Memorandum — Franck Report — Truman's message to the US Congress — Three-Power Agreed Declaration on Atomic Energy — Moscow Communiqué — Congressional apprehensions in the United States — The setting up of the UN Atomic Energy Commission and its terms of reference—Acheson-Lilienthal Report — What it was — How it differed from the Franck Report — What it was not — Reception to the Report.

"For many centuries, the legend of Prometheus, who sought to steal the secret of fire from the gods and who was punished by being forced to spend the rest of his life chained to a rock, has been the symbol of the penalties of presumptuous ambition. It was not understood that the punishment inflicted on Prometheus was an act of compassion; it would have been a much more severe penalty had the gods permitted their fire to be stolen. Our generation has succeeded in stealing the fire of the gods and it is doomed to live with the horror of its achievement."

Henry A. Kissinger,  
Nuclear Weapons and Foreign Policy  
(New York, 1957), 65.

The dropping of the atomic bomb on the Japanese city of Hiroshima on 6 August 1945, heralded a new era in human history. After years of intensive research and experiment, conducted in their later stages mainly in America, by scientists of many nationalities, the forces which hold together the constituent particles of the atom had at last been harnessed to man's use. "As a direct result, some 60,000 Japanese men, women and children were killed, and 100,000 injured; and almost the whole of a great seaport, a city of 250,000 people, was destroyed by blast or by fire."<sup>1</sup> As an indirect result, a few days later, Japan acknowledged defeat, and the Second World War came to an end.

At this time it was a widely held belief among statesmen, scientists and social thinkers all over the world that the appalling and revolutionary character of this weapon, the inadequacy of military defences and the impossibility of any permanent monopoly warranted an immediate and effective international control of atomic energy. The question that vexed their minds was: could atomic energy be so developed and so controlled that it would be used only for the advancement of human welfare and not be used for war and destruction?

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1. John Hersey, Hiroshima (Penguin Modern Classic, 1946), p.7. This moving and unforgettable account of the devastation of a historic city by a distinguished American journalist, when first published in the New Yorker (August, 1946), had occupied a complete issue of that prestigious journal.

Such a question had in fact been raised and plausibly answered too for the first time<sup>2</sup> in a report submitted to the U.S. Secretary of War, as early as June 11, 1945, i.e., about two months before the bombing of Hiroshima by a Committee of seven scientists belonging to the Metallurgical Laboratory in Chicago, of which Professor James Franck was the chairman.<sup>3</sup>

It stated clearly that the American monopoly of knowledge of how to produce nuclear energy could not last longer than a few years after the first bomb had been publicly demonstrated, and that effective defence against the new weapon would involve a staggeringly expensive dispersal of people and industry; it advised against using the bomb on Japan; and finally it discussed how international control might be achieved, to forestall the otherwise inevitable armaments race. It was suggested in the report that the simplest method of control was one which would ration the raw materials (Uranium and Thorium) to the nations in such small amounts as would make large-scale separation of fissionable isotopes impossible. In the opinion of the authors of the report, another method was also possible, "involving more mutual trust and understanding." It consisted

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2. To be sure, it was Niels Bohr who in a memorandum to President Roosevelt first suggested the international control of atomic energy but he had no scheme of control to offer. Moreover, he explicitly disqualified himself from a discussion of the political problems associated with such a control. For a text of the Bohr's Memorandum see Appendix A. For a highly enlightening discussion of the role of the scientists in the making of America's atomic policy see Robert Gilpin, American Scientists and Nuclear Weapons Policy (Princeton, 1962).
  3. For a full text of the Franck Report see Appendix B.

in allowing unlimited production, but keeping exact book-keeping on the fate of each pound of uranium mined. It was also clearly recognised that the former method of control would have the drawback of making impossible also the development of nuclear power for peacetime purposes. They also suggested, apparently for the first time, the scheme of "denaturing" fissionable materials to make them useless for military purposes, while retaining their usefulness for power engines.

Soon after the bomb had been dropped on Hiroshima, an immense spate of articles and announcements representing a wide variety of view-points filled the newspapers and periodicals of the world. Many of the scientific and technical aspects of atomic energy were released to the world in the form of an official American report called the Smyth Report. On 3 October 1945 President Truman in his statement to the Congress said:

In international relations, as in domestic affairs, the release of atomic energy constitutes a new force too revolutionary to consider in the framework of old ideas. We can no longer rely on the slow progress of time to develop a programme of control among nations. Civilization demands that we shall reach at the earliest possible date a satisfactory arrangement for the control of this discovery in order that it may become a powerful and forceful influence toward the maintenance of world peace instead of an instrument of destruction. Scientific opinion appears to be practically unanimous that the essential theoretical knowledge upon which the discovery is based is already known. There is also substantial agreement that foreign research can come abreast of our

present theoretical knowledge in time. The hope of civilisation lies in international arrangements looking, if possible, to the renunciation of the use and development of the atomic bomb, and directing and encouraging the use of atomic energy and all future scientific information toward peaceful and humanitarian ends. The difficulties in working out such arrangements are great. The alternative to overcoming these difficulties, however, may be a desperate armament race which might well end in disaster. Discussion of the international problem cannot be safely delayed until the United Nations Organization is functioning and in a position adequately to deal with it.<sup>4</sup>

It was with this sense of urgency and in response to mounting pressure of world public opinion that Prime Minister Attlee of Great Britain, President Truman of the United States and Prime Minister King of Canada — the political heads of the three countries which were directly involved in the making of the first atomic bomb — met in Washington on 10 November 1945 and five days later issued an Agreed Declaration on Atomic Energy<sup>5</sup> which laid the basis for the subsequent resolution at the first meeting of the United Nations.

A few weeks later the Foreign Ministers of the USSR, USA and the United Kingdom met at Moscow and considered a resolution proposed by the latter two powers to set up an Atomic Energy Commission under the auspices of the United Nations to

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4. Department of State, The International Control of Atomic Energy: Growth of a Policy, Publication 2702 (Washington, D.C., 1946) (hereafter referred to as International Control of Atomic Energy: Growth of a Policy); p: 109:

5. See Appendix C.



go into the question of international control of atomic energy. This resolution was suitably revised at the instance of Mr. Molotov, Foreign Minister of the USSR, to provide that, in view of the Security Council's primary responsibility for the maintenance of international peace and security, the Security Council should issue directions to the Commission in matters affecting security.<sup>6</sup> Molotov raised serious objection also to a paragraph in the proposed resolution which provided: "The work of the Commission shall proceed by separate stages, the successful completion of each of which will develop the necessary confidence of the world before the next stage is undertaken." He argued that this was a matter to be determined by the Commission. He withdrew his objection only after it had been explained to him that "it went to the heart of our whole proposal and that without it we would not offer the resolution."<sup>7</sup> It was also insistently pointed out to him that this language had been agreed upon in the earlier Truman-Attlee-King Agreed Declaration on Atomic Energy too. Ultimately, the three Ministers signed an agreement.<sup>7a</sup> stating that the three nations together with France, China and Canada would sponsor this resolution in its final form at the first meeting of the United Nations.

This agreement, however, met with serious opposition in the Congressional circles in the United States as it was soon construed as providing for the "disclosure of atomic

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6. James F. Byrnes, Speaking Frankly (London, n.d.), p.267.

7. ibid., p. 268.

7a. See Appendix D.

information" first and total "security" last.<sup>8</sup> The general Congressional opinion at that time was that "any disclosures regarding the atomic bomb should be part of a complete plan for adequate world-wide inspection and control."<sup>9</sup> Prominent Senators like Arthur H. Vandenberg Jr. and Tom Connally felt reassured only after they had been told by the State Department that the order in which the objectives were listed in the Moscow Communique was in no way indicative of the priority of objectives.<sup>10</sup> In the opinion of one scholar, this interpretation amounted to a drastic revision of the agreement reached at Moscow.<sup>11</sup>

Finally, the General Assembly of the United Nations, meeting in London at its first formal session, approved the resolution on 24 January 1946 setting up the Atomic Energy Commission.<sup>12</sup> The terms of reference of the Commission were as follows:

The Commission shall proceed with the utmost dispatch and enquire into all phases of the problem, and make such recommendations from time to time with respect to them as it finds possible. In particular the Commission should

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8. Arthur H. Vandenberg. Jr. (ed.), The Private Papers of Senator Vandenberg (Boston, 1952), p. 233.
9. ibid., p. 234.
10. ibid., p. 234. This interpretation of the agreement was held by the Congressional and executive leaders alike in the Government. See also Tom Connally, My Name is Tom Connally (New York, 1954), pp. 289-90; Harry S. Truman, Years of Decisions, Memoirs, Vol. I (New York, 1955), pp. 533-36.
11. Lisle Abboth Rose, After Yalta (New York, 1973), pp. 160-61. It is easier to reproduce than to verify the quotations of this learned American scholar.
12. For text of this resolution see Appendix E.

make specific proposals:

- (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;
- (d) for effective safeguards by way of inspection and other means to protect complying States against the hazards of violations and evasions.

The work of the Commission should proceed by separate stages, the successful completion of each of which will develop the necessary confidence of the world before the next stage is undertaken.

The Commission shall not infringe upon the responsibilities of any organ of the United Nations, but should present recommendations for the consideration of those organs in the performance of their tasks under the terms of the United Nations Charter.<sup>13</sup>

In the meantime, the then U.S. Secretary of State, Mr. Byrnes, anticipating favourable action by the U.N. General Assembly on the proposal drafted at Moscow, appointed early in January 1946 a Committee composed of: Under-Secretary of State, Dean Acheson (chairman), Mr. John J. McCloy, former Assistant Secretary of War, and the three men who supervised and directed the development of atomic energy, Dr. Vannevar Bush, Dr. James

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13. It can be easily seen that these terms were similar to those set forth in the earlier Three-Nation Agreed Declaration on Atomic Energy.

B. Conant and Major-General Leslie R. Groves. This Committee was "to study the subject of controls and safeguards necessary to protect this (the US) Government so that the persons hereafter selected to represent the United States on the Commission can have the benefit of the study."<sup>14</sup>

The Committee held its first meeting on January 14, 1946 and agreed that it was first essential "to have a report prepared analyzing and appraising all the relevant facts and formulating proposals."<sup>15</sup> To aid in these projects it appointed, on January 23, 1946, a Board of Consultants composed of Mr. David E. Lilienthal, Chairman of the Tennessee Valley Authority, who acted as the Chairman of the consulting Board; Mr. Chester I. Bernard, President of the New Jersey Telephone Company; Dr. J. Robert Oppenheimer, Director of the atomic bomb laboratory at Los Alamos during the war; Dr. Charles Allen Thomas, Vice-President in charge of Engineering Policy, General Electric Company.

The result of the combined efforts of these two groups was the Report on the International Control of Atomic Energy, made public on March 28, 1946. This was the first elaborate scheme for international control of atomic energy produced by any governmental body. This extraordinary document known for

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14. International Control of Atomic Energy: Growth of a Policy, p. 34.

15. ibid., p. 34.

its originality and produced by a civil servant, a nuclear physicist and three executives of great capitalist firms, is often referred to as Acheson-Lilienthal Report.<sup>16</sup> It was described as "one of the most imaginative and courageous state paper ever written."<sup>17</sup> The Report was a major breakthrough in the efforts towards international control of atomic energy as it established the technical feasibility of such control. As the official American Plan presented to the Atomic Energy Commission would embody many recommendations of this Report, a detailed summary is given below.

The Board of Consultants who first considered the control of atomic energy by means of covenants to "outlaw" atomic weapons, expressed the opinion that such covenants, unless supported by other measures, would put "an enormous pressure upon national good faith" which would be aggravated by the atomic bomb's deadly efficiency as a surprise weapon.<sup>18</sup>

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16. United States of America. Department of State, A Report on the International Control of Atomic Energy, prepared by the Secretary of State's Committee on Atomic Energy (The Acheson-Lilienthal Report), Publication 2498 (Washington D.C., 1946). This Report was reprinted in a condensed form in Bulletin of the Atomic Scientists, Vol.1, No.8 (April 1, 1946).
  17. Edward A. Shils, The Atomic Bomb in World Politics (London, n.d.), p.17; See also Harry S. Truman, Years of Trial and Hope 1946-1953, Memoirs, Vol.II (New York, 1956), p.7.
  18. International Control of Atomic Energy; Growth of a Policy p. 35.

They also rejected international control by inspection as it provided security neither against atomic warfare nor against possible infringements on agreements to outlaw atomic armaments.<sup>19</sup> There could hardly be any security if a system of control was based merely on outlawry of atomic weapons and inspection while allowing nations to be free in the development of atomic energy for non-military purposes; for the various stages by which the release of atomic energy could be accomplished, were the same regardless of the uses to which it was put.<sup>20</sup> Such a system would engender fears and lead to inevitable rivalries among nations to such an extent that there would be great incentives to divert fissionable material into the clandestine production of atomic bombs.<sup>21</sup> National operations uncontrolled by any means other than inspection and the premium they put on evasion of the agreement, taken together, "would place so great a pressure upon a system of international enforcement by police method that no degree of ingenuity or technical competence could possibly hope to cope with them."<sup>22</sup>

For any scheme of inspection to be effective and successful, the prior fulfilment of certain conditions would be absolute

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19. The State Department's Report, Bulletin of the Atomic Scientists, Vol.I, No.8 (April 7, 1946) (hereafter referred to as State Department's Report (BAS), p.3.

20. ibid., p. 3.

21. ibid., p. 4.

22. International Control of Atomic Energy: Growth of a Policy, p. 36.

essential. One of these was that extensive controls should be applied at every stage in the release of atomic energy, which, of course, meant making great demands on the competence of the necessary staff.<sup>23</sup> Secondly, such a controlling organization must be as well and as thoroughly informed about the operations as the operators themselves, and itself be actively engaged in research and development.<sup>24</sup> An examination of these and other necessary preconditions for a successful scheme of inspection led the Board of Consultants to conclude that "they cannot be fulfilled in any organizational arrangements in which the only instrument of control is inspection."<sup>25</sup> Furthermore, any system of control in which inspection is the only instrument of control would involve, besides being possibly a source of "social friction", such uncreative, police-like work that it would not be attractive to the type of personnel essential to the job.<sup>26</sup>

Even the extreme measure of forbidding all use of fissionable material would not solve the human problems for "to outlaw atomic energy in all its forms and enforce such a prohibition by an army of inspectors roaming the earth would

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23. State Department's Report (BAS), p. 3.

24. ibid, p. 3. See also International Control of Atomic Energy: Growth of a Policy, p. 37.

25. International Control of Atomic Energy: Growth of a Policy, p. 36.

26. ibid., p. 37.

overwhelm the capacity and endurance of men and provide no security."<sup>27</sup> The Lilienthal Board was thus "inescapably driven" to conclude that there could be no "reasonable reliance upon inspection as the primary safeguard against violations of conventions prohibiting atomic weapons, yet leaving the exploitation of atomic energy in national hands."<sup>28</sup>

Thus rejecting a scheme of prohibition by inspection, the Board laid down certain criteria for the adequacy of any plan of control. A plan of control was considered to be effective only if it met the following requirements.<sup>29</sup> It should reduce to manageable proportions the problem of enforcement of an international policy against atomic warfare. It should provide unambiguous and reliable danger signals if a nation took steps that led or might lead to atomic warfare. The plan must be conceived in such a way that if it failed or the whole international situation collapsed, any nation such as the United States would be in a relatively secure position. It should involve national action and minimise national rivalries in the dangerous aspects of atomic development. It should, of course, also be flexible enough to cope with any dangers arising from further developments in the field of atomic energy.

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27. International Control of Atomic Energy: Growth of a Policy, p. 37.

28. ibid., p. 38.

29. ibid., pp.38-39.



Proceeding from a consideration of the fact that uranium was the only natural element which could set off a chain reaction and thorium the only other element which could sustain it, the Board of Consultants concluded that the mining of these two elements is necessary and also, in view of the fact that they were found under particular geological conditions, feasible.<sup>30</sup> It was, therefore, suggested that mining operations must be placed under either ownership and operation or close supervision of the international control body - named in the Report as Atomic Development Authority.<sup>31</sup> The Report further provided that all "dangerous" activities relating to atomic energy should be exclusively in the hands of the Atomic Development Authority, while "safe" activities might well be left to private and national operation.<sup>32</sup> "Dangerous" activities were those "which offer a solution either in the actual fact of its physical installation, or by subtle alterations thereof, to one of the three major problems of making atomic weapons: (i) the provision of raw materials, (ii) the production in suitable quality and quantity of the fissionable materials, plutonium and U-235, and (iii) the use of these materials for the making of atomic bombs."<sup>33</sup> This meant that all operations which had in

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30. State Department's Report, (BAS), Vol.I, No.8 (April 1, 1946), p. 4.

31. *ibid.*, pp.4-5.

32. *ibid.*, pp.6-7.

33. International Control of Atomic Energy: Growth of a Policy, p. 41.

them even the slightest potentiality for the making of the bomb were dangerous, even if such a making of the bomb was not actually intended. Hence "prospecting, mining, and refining of uranium and, to a lesser extent thorium; the enrichment of the isotope U-235 by any methods now known to us; the operation of the various types of reactors for making plutonium, and of separation plants for extracting the plutonium; and research and development in atomic explosives"<sup>34</sup> were all dangerous. They must, therefore, be conducted only by the Atomic Development Authority.

Some of the activities considered to be "safe" by the Report<sup>35</sup> were:

- (a) The application of radioactive materials as "tracers" in scientific, medical and technological studies.
- (b) Small nuclear reactors designed to use denatured U-235 or plutonium.
- (c) The development of power from the fission of denatured U-235 and plutonium of high power-level reactors, operating in the range from 100,000 to 1,000,000 kilowatts; provided there was a "minimum of reasonable supervision of their design, construction and operation."

It was stated in the Report that "the safe operations

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34. ibid., pp. 42-43.

35. ibid., p. 42.

are possible only because the dangerous ones are being carried out concurrently."<sup>36</sup> "Safe activities" would, however, have to be subjected to moderate control by the Atomic Development Authority through licensing, rules and regulations, collaboration on design, etc.<sup>37</sup> In the opinion of the Board, "it is not possible to devise an atomic energy programme in which safeguards independent of the motivation of the operators preclude the manufacture of material for atomic weapons."<sup>38</sup> Moreover, the dividing line between "dangerous" and "safe" activities would be subject to continual reexamination by the Atomic Development Authority.<sup>39</sup> The Atomic Development Authority, besides maintaining a rigorous and continuous control over known mining operations, would also have to carry on surveying and prospecting activities to effectively deal with the problem of illicit exploitation of newly discovered deposits of raw materials.<sup>40</sup>

The Atomic Development Authority, which was conceived as a United Nations Commission or as an international public corporation or authority, would have the power to own and lease property and to carry on mining, manufacturing, research, licensing, inspection, selling, or any other operations.<sup>41</sup>

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36. ibid., p. 42.

37. State Department's Report (BAS), p. 7.

38. International Control & Atomic Energy: Growth of a Policy, p. 42.

39. The State Department's Report (BAS), p. 8.

40. ibid., pp. 6-7.

41. ibid., p. 6.

The development agency would be truly international in character. And its staff would be recruited on an international basis. The Board also suggested<sup>42</sup> that the geographical distribution of the stockpiles and installations of the Atomic Development Authority must be such as would maintain a strategic balance among states; so that any sudden seizure of ADA's installations or diversion of dangerous materials by any state at any time would not put the complying states in a disadvantageous position.

The proposed plan for the control of atomic energy would be carried out in four stages:<sup>43</sup>

- (1) First, the proposals for control would be discussed in the United Nations Atomic Energy Commission and reports submitted to the Security Council and the General Assembly of the United Nations. The national legislatures would act upon the recommendations of the United Nations.
- (2) The proposed Authority would be actually established by the action of various governments upon the report of the United Nations.
- (3) The Atomic Development Authority would gradually assume its functions in the field of industrial production.
- (4) Eventually, the Atomic Development Authority would assume responsibilities for research in the field of explosives as an adjunct to its regulatory and operational duties.

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42.. ibid., p.8.

43. International Control of Atomic Energy: Growth of a Policy, p. 46.

The Board suggested that the United States should share her knowledge with the Authority at each of the four stages listed above in such a way that the extent of knowledge thus revealed at each stage would strictly correspond to the requirements for the completion of that stage.<sup>44</sup> That is, when the plan was in full operation, the United States would have disclosed all the information. This suggestion stemmed from the recognition by the Board that, even without a control system, the United States could not expect to retain its monopolistic position with respect to bombs, plants, materials, personnel and knowledge indefinitely in the future.<sup>45</sup>

In the assumption or transfer of authority over physical things also, the plan permitted a similar progress by stages beginning in the field of raw material production, and going on to the control of explosives.<sup>46</sup>

The significant provision in the Report was that at all times during the transition period the existing bombs, fissionable material, raw materials, facilities and plants for the production of atomic energy belonging to the United States

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44. ibid. See also "The State Department's Report" (BAS), pages 2 & 9.

45. "The State Department's Report" (BAS), pp.2-3.

46. "The State Department's Report" (BAS), pages 2 & 9.

would continue to be located within the US territory. Thus, if there should be a breakdown in the plan at any time during the transition, the United States would be in a favourable position with regard to atomic weapons.<sup>47</sup>

When finally the plan was in full operation, the United States would have ceased to possess its bombs and it would not be the legal owner of stockpiles of fissionable material, raw material, or of plants in which they could be produced; moreover, by virtue of the principle of strategic balance, other states would have situated in their territory the same types of operations, safe and dangerous, as would be found in the United States.

However, the Committee, in its letter of transmittal to the Secretary of State, stated the need for further study of the stages of transition and emphasized that the plan did not call for the United States to cease making bombs.

The development of detailed proposals for such schedulling 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 any specific time.

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47. ibid., p. 9.

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>48</sup>

It should be noted here that the Acheson-Lilienthal Report significantly differed from the Franck Report in having done away with the latter's main defect. The scheme of control proposed by the earlier Report, it may be recalled, by preventing any nation from developing large-scale atomic energy operations, would have made impossible the production of power for industrial purposes. The Acheson-Lilienthal Report, on the other hand, proposed that all large-scale or "dangerous" atomic plants would be owned and operated by an international Atomic Development Authority — thus making it possible for all the nations to still get the full benefit of atomic power.

It is also very significant to note that the plan for international control of atomic energy did not stipulate any punishments (say, in the form of sanctions) for possible violations. The consultants had presumably considered that such a stipulation, far from serving any useful purpose, would only wreck any chances of acceptance of the plan by the Russians.<sup>49</sup> Further, the most notable feature of the plan was its discreet silence on the relationship of the Atomic Development Authority to the Security Council and on the nature of disposal of existing stockpiles of atomic weapons.

It should be stressed here that the consultants never addressed themselves to a consideration of such general questions

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48. ibid. p.2.

49. The Journals of David E. Lilienthal, The Atomic Energy Years 1945-1950, Vol. II (New York, 1964) (hereafter referred to as Atomic Energy Years), pp.60 & 69.

as universal disarmament. They never aimed at eliminating war, but only at making it highly improbable. For, the abolition of war, much as it was desirable, need not be a precondition of international control of atomic energy. Rather the control of atomic energy might be an important step towards the abolition of war.<sup>50</sup> It was also hoped that the plan would set a pattern, by making a big breach in the problem of disarmament, for future international cooperation.<sup>51</sup>

It should also be kept in mind that the Report was offered not as a formal statement of suggested policy but as a basis for public discussion and consideration.

The Acheson-Lilienthal Report was "unauthorizedly"<sup>52</sup> released to the press on March 28, 1946. Scientists, who had been critical of US policy statements, endorsed the report.<sup>53</sup> Edward Teller described it as a "ray of hope"<sup>54</sup> and Harold Urey called it a "statesmanlike pronouncement."<sup>55</sup> But there

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50. David E. Lilienthal, "How Atomic Energy can be Controlled", Bulletin of the Atomic Scientists, Vol.II, Nos. 7 & 8, (October, 1946), p. 15.
51. Robert J. Oppenheimer, "The International Control of Atomic Energy", Bulletin of the Atomic Scientists, No.12, (June, 1946), p. 4.
52. Harry S. Truman, Years of Trial and Hope 1946-1953, Memoirs, Vol.II (New York, 1956) (hereafter referred to as Years of Trial and Hope), p.9.
53. Richard J. Barnet, Who Wants Disarmament (Boston, 1960), p. 13.
54. See Bulletin of the Atomic Scientists, Vol.I, No.8 (April 1, 1946), p. 10.
55. ibid., p. 13.

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was criticism too. Norman Cousins and Thomas Finletter criticised the plan as being an effort to confer the most-favoured-nation status on the United States. Noting that all the nations in the world would be asked to surrender their sovereignty in the mining, processing, and manufacture of fissionable materials, while the United States would still be permitted to stockpile its own atomic bombs, they observed: "appealing and reassuring as this may sound in the Senate of the United States, it is as myopic as it is impractical." They considered the right reserved to the United States to determine unilaterally when it would cease bomb production an "impossible condition". They also wondered (in an obvious reference to the ADA) how it would be possible to operate what was in effect an agency of world government without a world government to back it up; and how sovereignty could be abrogated in one area, while all the other areas continued to operate under the old and incendiary sovereignties.<sup>56</sup> However, "reaction to the Acheson-Lilienthal Report in the United States was generally favourable."<sup>57</sup> Considering the favourable reception which the Report had and the impress of authority it carried, the authors of the Plan had enough reason to believe that it was going to be the official American policy in the UN Atomic Energy Commission,

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56. Norman Cousins and Thomas K. Finletter, "A Beginning for for Sanity: A Review of the Acheson-Lilienthal Report", Bulletin of the Atomic Scientists, Vol. II, Nos. 1 & 2 (July 1, 1946), p. 14.

57. Richard J. Barnet, Who Wants Disarmament, (Boston, 1960), p.13. According to P.M.S. Blackett, the Report was received with great acclamation in scientific and liberal circles in the West. See his Military and Political Consequences of Atomic Energy, (London, 1948), pp.109-110.

which was due to meet shortly. This was, indeed, the case<sup>58</sup> until there emerged on the scene a venerable Jewish statesman, Bernard Baruch, to upset their apple-cart.

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58. Margaret L. Coit, Baruch (Boston, 1957), p.565. See also Dean Acheson, Present At the Creation (London, 1969), p. 154.

## CHAPTER II

THUS SPAKE BARUCH

The appointment of Bernard Baruch as American representative to the UNAEC - How it was received by the public - Baruch's life and convictions - His disapproval of the Acheson-Lilienthal Report - His views on disarmament - The Baruch Plan - How it differed from the Lilienthal Plan - Reactions to the Baruch Plan in the Commission - The First Report of the Commission to the Security Council.

Bernard M. Baruch was appointed on March 18, 1946 as the US representative to the United Nations Atomic Energy Commission which was to meet on 14 June of the same year. The task assigned him was, as the then Secretary of State James F. Byrnes succinctly put, of translating the various proposals stimulated by the Acheson-Lilienthal Report into a workable plan.<sup>1</sup> To President Truman, Baruch seemed to be the "logical choice" for several important reasons. "Not the least important of these was that Baruch enjoyed considerable esteem in the Senate. His association with the administration's plan for the control of atomic energy might help remove some of the opposition to the McMahan bill<sup>2</sup> in Congress. Baruch had also

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1. James F. Byrnes, Speaking Frankly, (London, n.d.), p. 269.
  2. A bill providing for the civilian control of atomic energy.

succeeded, over the years, in forming many friendships abroad, including that of Winston Churchill, and during a long life he had acquired the prestige of an "elder statesman."<sup>3</sup> An estimate of Baruch which Byrnes was only too glad to confirm when he said:

During the recent war, as during World War I, he had rendered distinguished public service. He had been official adviser to me when I was Director of War Mobilization, meeting with me regularly and helping with many problems; he had been an unofficial adviser to the President and the heads of several war agencies. He had earned a rest from public service, but appreciating the importance of the assignment, he agreed to undertake the job.<sup>4</sup>

Baruch chose as his alternates and advisers: "Herbert Bayard Swope, whose gift for vibrant prose made him for secretary and public relations man; Ferdinand Elberstadt, quietly planning tactics and strategy; John Hancock, with his grasp of organisation; and Fred Searls, a Western pioneering type, who was one of the world's best mining engineers. This was the group who with Baruch would speak for their country in presenting the American report to the newly formed UNAEC."<sup>5</sup>

Baruch's appointment was greeted with "deserved  
<sup>6</sup>  
 acclaim by the public." It was received very favourably by

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3. Years of Trial and Hope, pp.8-9. Italics mine.

4. Byrnes, op.cit., pp. 269-270.

5. Coit, op.cit., pp.572-573.

6. Byrnes, op.cit., p. 270.

the press.<sup>7</sup> Senator Vandenberg, Chairman of the Senate Foreign Relations Committee, graciously waived Baruch's appearance before that Committee.<sup>8</sup> Approval, however, was not unanimous. In scientific circles particularly there was disappointment and dissatisfaction at Baruch's selection.<sup>9</sup> In fact, Vanner Bush, a distinguished scientist and Baruch's friend, bluntly told him that he was "the most unqualified man in the country for the task."<sup>10</sup>

There seems to be little though in Baruch's long life that would testify to his friend's uncharitable opinion of him. He had left Wall Street for Washington at the age of forty-seven after an astonishing career in finance, thereby involving himself in the most crucial issues of his time.<sup>11</sup> Baruch, however, was somewhat different from most Wall Street tycoons. His Jewish family placed more value on scholarship and service than on moneymaking and he was naturally drawn to a career of public service.<sup>12</sup> Baruch, who had been first brought into Democratic politics by Woodrow Wilson during the presidential campaign of 1912, had succeeded in coordinating American economic power for

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7. Years of Trial and Hope, p.9; Coit, op.cit., p. 564.

8. Bernard M. Baruch, The Public Years (London, 1961) (hereafter referred to as Public Years), p. 334.

9. ibid., p. 334; Coit, op.cit., pp. 573-574. This could be gauged, among other things, by the refusal of the State Department board of scientific consultants to continue to serve in that capacity as advisers to Baruch, despite Byrnes' request to them to do so. Public Years, p. 334.

10. Public Years, p. 334; Coit, op. cit., p. 573.

11. ibid., p. 11.

12. ibid., pp.11-12.

the first time in the nation's history as Chairman of the War Industries Board in the 1910s.<sup>13</sup> His work set precedents that were not overlooked by Franklin D. Roosevelt when, in the 1930s, the latter organised the country to fight the Great Depression.<sup>14</sup> He was also adviser to Woodrow Wilson in shaping the Treaty of Versailles; his voice was one of the earliest raised in the 1930's in warning against the menace of Germany's growing power.<sup>15</sup>

He had fought for industrial preparedness in a period when it was considered almost treasonous.<sup>16</sup> He was also subject to anti-semitic attacks. The elder Henry Ford had struck perhaps the greatest blow when he accused, in his newspaper, the Dearborn Independent, Baruch of being a part of a Jewish conspiracy to control the world's economy.<sup>17</sup> Baruch never recovered from Ford's insulting charges, and he refused public positions during World War II partly because of the terrible hurts inflicted by the auto-magnate. At 75 Baruch undertook his last public mission as American representative to the United Nations Atomic Energy Commission.

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13. ibid., pp.58-77.

14. ibid., pp. 222-243.

15. ibid., pp.92-108, 243-244.

16. ibid., pp. 244-269.

17. ibid., pp.155-157.

One cardinal lesson this septuagenarian had learnt from his association with Wilson was that idealism, unless tempered with some realism, could lead to tragic consequences. He knew that the world could not be made at one sitting; that progress came in slow stages. That one could give the world an instrument of good will; but not good will itself.<sup>18</sup> He agreed with Wilson when the latter described Karl Marx as a thinker who, more than any other, had corrupted the thinking of the world.<sup>19</sup> He favoured "balanced budgets" and wondered whether there was not something fundamentally wrong with the Keynesian economics.<sup>20</sup> He believed that "in any conflict between civilian and military needs, the military would have to have priority,... because the lives of our youth and the survival of our nation were at stake."<sup>21</sup>

To sum up this biographical digression, Baruch might be described as a man of firm convictions with many years of distinguished public service behind him, who always looked upon himself as a custodian of America's national interest. But the portrait that Lillienthal drew of him -- and Acheson lustily endorsed it -- was of a wily "old man" with terrifying

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18. See Public Years, pp. 142-43.

19. Public Years, p. 142.

20. ibid., pp.120-121.

21. ibid., p.287.

vanity, the more pitiable for his repeated denials of his senility.<sup>22</sup> This uncomplimentary estimate of a famous personage would appear to be tinged with a certain personal animosity which might perhaps be traced to Baruch's disapproval of the Acheson-Lilienthal Report. Baruch considered it at the most merely "thoughtful". The reason was he found it lacking in several respects. In particular, it did not deal with the problem of enforcement -- a problem which he considered crucial.<sup>23</sup>

Baruch was somewhat disturbed by the "unauthorized" publication of the Lilienthal Report. He apprehended that it came close to being interpreted as the official American policy.<sup>24</sup> He was filled with indignation by a disclosure, made a little later by Alexander Cadogan (who was to be the British representative on the UNAEC) and confirmed by Acheson, that "the United States would offer the Acheson-Lilienthal report to the UNAEC as a basis for discussion."<sup>25</sup> By issuing a threat of resignation from the Commission in the form of a letter to President Truman and by closely following it up with an interview with him, Baruch finally succeeded in obliging the President to state explicitly that it was Baruch and no other, who was to draft the atomic proposals.<sup>26</sup> Although it was

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22. Atomic Energy Years, pp.39-40, 49-51, 54 and 195; Dean Acheson, Present At the Creation (London, 1969), pp.154-156.

23. Public Years, p. 331.

24. ibid., p. 331.

25. ibid., pp.331-332.

26. ibid., pp.332-333.



Truman who formally made the policy decision as regards the control of atomic energy, there is enough evidence on record to suggest that it was Baruch who actually made it -- at least to the extent of modifying the Lillienthal Report in several important respects. Truman himself acknowledged this when he said in his memoirs: "Mr. Baruch's contribution to the atomic energy programme was that he transformed the Acheson-Lillienthal Report from a working paper into a formal, systematic proposal and that he added a section that called for sanctions against a nation violating the rules."<sup>27</sup>

There is no doubt whatever that in drafting a plan for the control of atomic energy, which has come to be referred to as the Baruch plan, Baruch was profoundly influenced by a consideration of the futile disarmament efforts of the not too distant past. Here is a revealing quotation from his autobiography:

I myself have never placed any faith in the renunciations of war, or in disarmament agreements as a means of preserving peace.

In the past disarmament treaties -- lacking as they always have, the provisions for enforcement -- have actually been detrimental to peace. They have lulled peace-loving nations into a false sense of security, while potential aggressors went ahead unhindered with preparations for war.

Certainly disarmament today is a goal we must pursue relentlessly and in good faith. We must try to lighten the costly burden of arms and diminish the danger of loaded guns, if at all possible. But let us not delude ourselves. Peace does not follow disarmament; disarmament follows peace.

We must remember, too, that disarmament agreements which rest on nothing more than treaty pledges are meaningless. They are worse; they are invitations to disaster. Only when disarmament can be effectively supervised and enforced by international authority -- only when we have devised a reliable system of inception and control -- only then can we safely ground our arms. This principle was crucial in my thinking when, in 1946 I was given the task of drafting a plan for the control of atomic energy. Inspection, control and punishment of violators were the cardinal principles upon which the plan was based.<sup>28</sup>

It was this plan which Baruch put forward at the first meeting of the Commission on June 13, 1946, in an impassioned speech which began with the words, "we are here to make a choice between the quick and the dead. That is our business."

He proposed the setting up of an Atomic Development Authority to which should be entrusted all phases of the development and use of atomic energy, starting with the raw material and including

- (1) "Managerial control of ownership of all atomic energy activities potentially dangerous to world security."
- (2) "Power to control, inspect and license all other atomic activities."
- (3) "The duty of fostering the beneficial uses of atomic energy."
- (4) "Research and development responsibilities of an affirmative character intended to put the Authority

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28. Public Years, pp.246-247.

in the forefront of atomic knowledge and thus enable it to comprehend, and therefore to detect misuse of atomic energy."<sup>29</sup>

Baruch proposed that "the Authority should set up a thorough plan for control of the field of atomic energy, through various forms of ownership, dominion, licences, operation, inspection, research and management by competent personnel. After this is provided for, there should be as little interference as may be with the private, corporate and State relationships in the countries involved."<sup>30</sup> The Authority would have as one of its earliest purposes to survey the world supplies of uranium and thorium to bring them under its dominion.<sup>31</sup> It would have a complete monopoly of the production of fissionable materials besides a sole and exclusive right to conduct research in the field of atomic explosives.<sup>32</sup> The plan would involve international inspection, and that in turn would require that the representatives of the Authority should have adequate freedom of access to any part of any country, wherever the authority deemed it necessary.<sup>33</sup>

The plan of control would, of course, come into effect in successive stages; these being specifically fixed

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29. UNAEC/P.V.1, p.7.

30. UNAEC/P.V.1, p.10.

31. ibid., pp.10-11.

32. ibid., p.11.

33. ibid., p. 12.

in the charter for transitions from one stage to another, as contemplated in the resolution of the United Nations Assembly which created the Commission.<sup>34</sup>

Baruch laid great stress on the establishment of an effective system of control and on the fixing of 'penalties of as serious a nature as the nations wish, and as immediate and certain in their execution as possible' for violations by nations of their solemn agreements not to develop or use atomic energy for destructive purposes.<sup>35</sup> He stated unequivocally that the veto power of the five permanent members of the Security Council must in no circumstances apply to such violators.<sup>36</sup> For "the bomb does not wait upon debate". He emphatically stated that "the matter of punishment lay at the very heart of our present security system."<sup>37</sup>

He also made it plain that "before his country is ready to relinquish any winning weapons, it must have more than words to reassure it. It must have a guarantee of safety, not only against the offenders in the atomic area, but against the illegal users of other weapons: bacteriological, biological, gas, perhaps, and (why not?) against war itself."<sup>38</sup>

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34. ibid., pp.12-13.

35. ibid., p. 8.

36. ibid., p. 9.

37. ibid., p. 9.

38. ibid., pp.9-10.

When an adequate system for control of atomic energy, including the renunciation of the bomb as a weapon, had been agreed upon and put into effective operation and condign punishments provided for violations of the rules of control which were to be stigmatised as international crimes, the manufacture of atomic bombs would stop; existing bombs would be disposed of pursuant to the terms of the treaty; and the Authority would be in possession of full information as to the know-how for the production of atomic energy.<sup>39</sup>

Baruch also expressed the hope that success in the direction of control of atomic energy might lead to a similar success in the elimination of other weapons adaptable to mass destruction.<sup>40</sup>

While calling upon the nations to accept his proposals Baruch said: "The solution will require apparent sacrifice in pride and in position, but better pain as the price of peace than death as the price of war."<sup>41</sup> For peace is never long preserved by weight of metal or by an armament race. Peace can be made tranquil only by understanding and agreement fortified by sanctions.<sup>42</sup>

At the seventh meeting of the Commission on December 5, Baruch submitted to the Commission a set of proposals in the form of "General Findings" and "Recommendations" by way of

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39. ibid., p.8.

40. ibid., p.10.

41. ibid., p.10.

42. ibid., p.10.

making it clear that the proposed international control agency should be established within the framework of the United Nations.<sup>43</sup>

Years later, Baruch would sum up his view on the control of atomic energy in his autobiography thus: "The indispensable requirement for an enduring peace is a foolproof system of inspection and control of all forms of nuclear energy, with punishment for any violation of the agreement. Once an agreement is reached no veto should be permitted to nullify it."<sup>44</sup>

The plan of control submitted by Baruch to the Commission, while substantially based on the Acheson-Lilienthal Report, differed from the latter in several significant respects. While the Lilienthal Report had provided for the ownership by the ADA of uranium and thorium mines, the Baruch Plan provided for the control and management of atomic raw materials only after they had been severed from the ground;<sup>45</sup> and, moreover, through the insertion of such ambiguous words as "dominion", altogether precluded the idea of ownership of mines. Although Baruch and his associates did not say it so explicitly in the Commission the disposal of the existing

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43. First Report of the United Nations Atomic Energy Commission to the Security Council, Dec. 31, 1946 (Department of State pub. 2737), parts II, C, and III, pp.17-22.

44. Bernard M. Baruch, My Own Story (New York, 1957), p.324.

45. UNAEC/26, Chapter 3, pp.28-40.

atomic weapons did not mean their destruction but simply turning them over to the United Nations so that they might be used for possible enforcement measures — a notion which Lilienthal and his co-workers explicitly had rejected.<sup>46</sup>

Lastly, while the Lilienthal Report strictly confined itself to a consideration of the problem of international control of atomic energy, the Baruch Plan went a step farther and linked it with not only the elimination of other weapons of mass destruction but with the abolition of war itself — thus lending substance to Lilienthal's suspicion that Baruch would hopelessly confuse and mix issues by making a proposal which would be in the nature of a call for total disarmament.<sup>47</sup>

Furthermore, the Baruch plan did not keep much faith in a scheme of control which merely provided reliable danger signals in the event of a violation of agreement. Hence its stress on sanctions, and swift and stern punishment in case of violation.

However, Baruch and his team came to the negotiating table with a plan of control which they believed to be fair and from which they would not retreat. "Baruch himself strongly felt that the subject was too important for bargaining and rejected the familiar diplomatic tactic of taking extreme initial positions in the hope of securing agreement by means of subsequent "concession".<sup>48</sup> For one thing, he was convinced that his basic approach to the problem of atomic control was

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46. Atomic Energy Years, p. 42.

47. ibid., p. 42.

48. Barnett, op.cit., pp.22-23.

the only correct one, and, for another, he doubted that Congress would accept any compromise that looked like a retreat.<sup>49</sup>

Nevertheless, the Baruch Plan won the support of an overwhelming large majority of the members of the Commission. Alexander Cadogan, the British representative, warmly welcomed the Baruch Plan.<sup>50</sup> The French delegation led by Alexandre Parodi considered the plan as "the most generous and broad-minded contribution" and declared that France would support it in principle.<sup>51</sup> General McNaughton, representing the Canadian Government, "welcomed the Baruch Plan in its essentials."<sup>51a</sup> Quo Tai-Chi of the Nationalist China expressed his government's support to the Baruch Plan in laudatory terms.<sup>52</sup> Herbert Evatt, speaking for Australia, declared that his country was in general agreement with the plan of control submitted by Baruch. He, however, hoped that the Commission, while devising a system of control, would take due note of the fact that the countries which were relatively poor in existing power resources, and particularly those countries which also possessed significant deposits of uranium ores and thorium concentrates, would be concerned with the possibility of rapid application of nuclear energy for the production of industrial power.<sup>53</sup> The Mexican

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49. Coit, op.cit., p.511.

50. UNAEC/P.V.2, p.21. Cadogan was actually browbeaten by Baruch into accepting his plan. See Coit, op.cit., p.606.

51. UNAEC/P.V.3, p.38.

51a. UNAEC/P.V.2, pp.19-20.

52. UNAEC/P.V.2, p.20.

53. UNAEC/P.V.3, pp.50-51.



delegation led by Sandoval Vallarta announced to the Commission that "the proposals stated by Mr. Baruch in his speech of 14 June are acceptable to Mexico, although the question of managerial control of deposits of uranium ore will still require separate and careful consideration."<sup>54</sup> The Netherlands, Brazil, Egypt and Syria followed suit.

But the opposition to the Baruch Plan came from the delegations of the Soviet Union and Poland led by Gromyko and Lange respectively. The Polish delegation severely criticised the Baruch Plan and emphatically stated that it was impolitic to advance such proposals as had little chance of being accepted by all the Great Powers.<sup>55</sup> The Soviet Union, besides criticising the Plan bitterly, put forward, unlike other members of the Commission who reacted to the plan, a set of alternative proposals too. A detailed discussion of these proposals and their apprehensive character, would form the subject matter of the following chapter.

With a view to composing the differences between the American and the Soviet proposals, the Commission appointed a number of sub-committees for studying the technical and scientific aspects of the problem. The findings of these committees tended generally to support the main recommendations of the Baruch Plan. Baruch advocated a speed-up of their work and the submission of a report by the end of the year. Notwithstanding Gromyko's objections and the unwillingness of some

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54. UNAEC/P.V.2, p. 32.

55. UNAEC/P.V.2, pp.118-119.

non-Soviet delegates to go ahead on the whole front at once, the First Report to the Security Council,<sup>56</sup> including all the basic Baruch proposals, was approved on December 30, 1946. Ten nations voted in favour. The Soviet Union and Poland abstained.

A few days later Baruch himself resigned from the Commission because "he had reached the end of the furrow." Johannes Steel writing in World Affairs saw Baruch's withdrawal as "sinister", and claimed that it made all further negotiations impossible. "It was a diabolically clever maneuver because whoever now represents the United States in the UNAEC is under the shadow of the Baruch veto."<sup>57</sup>

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56. For summary of this Report see Appendix G.

57. Report by Johannes Steel in World Affairs, Undated copy in the Atomic Energy File, as quoted from in Coit, op. cit., p. 607.

## CHAPTER III

THE SOVIET APPREHENSIONS

The proposals of the USSR for the control of Atomic Energy - Their rejection by the Working Committee - The sources of Soviet opposition to the Baruch Plan - The Second Report of the UNAEC to the Security Council - Impasse in the Commission - Struggle to influence world public opinion - Suspension and dissolution of the UNAEC.

As an apparent alternative, and in opposition to the Baruch Plan, the Soviet Union put forward a plan of its own for the control of atomic energy. The Soviet official proposals were put before the Atomic Energy Commission by Mr. Gromyko at its second meeting on 19 June, 1946 and at subsequent meetings. At the second meeting of the UNAEC, he made two concrete proposals.<sup>1</sup>

The first was for an international agreement to outlaw the use and production of atomic weapons. The States signatories to the agreement would bind themselves not to use or produce atomic weapons in any circumstances. They would undertake to destroy all atomic weapons in existence, or under construction, within three months of signing the treaty. Any violation of the terms of the treaty was to be declared a serious crime against humanity and national legislation

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1. UNAEC/P.V.2, pp.24-29.

passed providing for severe punishment. Gromyko reminded the members of the Commission that similar agreements in the past, outlawing gas and bacteriological warfare, had been successful. The treaty would be of indefinite duration and all States, whether members of the United Nations or not, would be free to participate in it.

The Second proposal was for the immediate setting up of two Committees, each composed of one member from every State represented on the Atomic Energy Commission. The first of these Committees would study how best to carry out the first of the Commission's terms of reference which provided for 'extending between all nations the exchange of basic scientific information for peaceful ends'. This exchange of scientific information should, Gromyko asserted include details of technological processes involved in obtaining and using atomic energy and the forms, sources and locations of raw materials necessary for the production of atomic energy. This would facilitate general development of atomic energy for the benefit of mankind.

The Second Committee would draft an international agreement outlawing the use and production of all atomic weapons and similar weapons capable of being used for mass destruction. It would also consider methods of control and organisation for ensuring the observance of the agreement. It would further concern itself with the elaboration of a system of sanctions to be applied against the unlawful use of atomic energy.

A year later, however, Gromyko submitted a more comprehensive set of supplementary proposals<sup>2</sup> which provided that:

- (1) Strict international control should be established simultaneously over all facilities engaged in mining of atomic raw materials and in production of atomic materials and atomic energy.
- (2) For the control of atomic energy facilities, there should be established, within the framework of the Security Council, an international Commission for atomic energy control, to be called the International Control Commission.
- (3) The Commission should set up its own 'inspectorial apparatus'.
- (4) The terms and organizational principles of international control of atomic energy, and also composition, rights and obligations of the International Control Commission, as well as the provisions on the basis of which it would carry out its activities, should be determined by a special international convention on atomic energy control, which was to be concluded in accordance with the convention on the prohibition of atomic weapons.
- (5) The International Control Commission should periodically carry out inspection<sup>3</sup> of facilities for mining of atomic raw

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2. UNAEC/P.V.12, pp.21-24.

3.. See also Department of State, International Control of Atomic Energy: Policy at the Crossroads (Washington, D.C., 1948) (hereafter referred to as International Control of Atomic Energy: Policy at the Crossroads), pp.113-115.

materials and for the production of atomic materials and atomic energy.

(6) While conducting inspections of atomic energy facilities, the Control Commission should undertake to check existing stocks of atomic raw materials, atomic materials and unfinished products, mining facilities, and all production plants. It should also make special investigations of alleged violations.

(7) The inspectors should have the right of 'free access' to all mining and production facilities, and of acquaintance with the production operations of the atomic energy facilities, to the extent necessary for the control of atomic materials and atomic energy. They should also be allowed to weigh, measure and analyse atomic raw materials and finished products and ask Governments for any information they wanted. The Control Commission should also have the right of submitting recommendations for the consideration of the Security Council on measures in regard to violators of the conventions on the prohibition of atomic weapons and on the control of atomic energy.

(8) "Signatory States to the convention on the prohibition of atomic weapons should have a right to carry on unrestricted scientific research activities in the field of atomic energy, directed toward discovery of methods of its use for peaceful purposes." But the Control Commission, of course, would have its own research group, recruited from international personnel, to carry out scientific research in the field of atomic energy.

One of the most important tasks of the Control Commission would be to ensure a wide exchange of information among nations in this field and to render necessary assistance, through advice, to the States parties to the convention, which may require such assistance.

Gromyko added that there would be no veto in the day-to-day operations of the control authority, ruled out the idea of automatic sanctions by a control agency against a violator, and stated that the most that a control agency could do in such cases was to make recommendations to the Security Council, which would decide on appropriate measures.<sup>4</sup> Any other arrangement would be, in the Soviet Government's opinion, contrary to the Charter.<sup>5</sup>

These proposals were duly referred to the Working Committee. But that Committee, which reflected the Commission in its composition, promptly rejected them saying that "they did not provide an adequate basis for the development by the Committee of specific proposals for an effective system of international control of atomic energy."<sup>6</sup>

While both the Baruch Plan and the Soviet Plan of control reflected the common conviction that the urgency of the problem raised by the liberation of a new form of energy

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4. See International Control of Atomic Energy: Policy at the Crossroads, pp.113-115 and 143-146.

5. UNAEC/P.V.8, p.111.

6. International Control of Atomic Energy: Policy at the Crossroads, p. 115.

imposed on the international community a duty to deal with it, these two plans were contradictory in nature especially on three essential points. First, the plans were diametrically opposed to one another on the question of priority as between the outlawing of nuclear weapons and the installation of an effective system of international control of atomic energy. As regards the establishment of a control system, the Soviet government insisted on the following priorities: first, a prohibition of atomic weapons; second, a control system. The majority plan envisaged: first, a control system; at a later stage, depending upon the realization of certain conditions, prohibition of atomic weapons. Secondly, the two plans diverged fundamentally from one another on the very character of the system of control. According to the Baruch Plan, it would be wholly international, while the Soviet Plan provided for control to be exercised by individual governments. The Soviet Union was reluctant to hand over to an international authority anything but the right to carry out periodical and very limited inspections. Finally, the plans were opposed on the question of whether the "right of veto" should be maintained or done away with in all decisions affecting the field of atomic energy.

In order, however, to grasp the full significance of the Soviet proposals and to understand the apprehensive character of their formulation, it is necessary to investigate the sources of Soviet opposition to the Baruch Plan.



One of the chief Soviet objections to the Baruch Plan centred on the question of prohibition of atomic weapons. Prohibition of atomic weapons and control of atomic energy were two inseparable questions;<sup>7</sup> and, as such, "there can be no talk of control unless a convention for the prohibition of atomic weapons has first been concluded."<sup>8</sup>

Again, for the Soviet Union, the proposal to do away with the "veto" power in all questions of control, amounted to an unacceptable revision of the UN Charter.<sup>9</sup> While agreeing that there should be no veto power with regard to the day-to-day activities of the international control authority, the Soviet delegation affirmed that the question of sanctions in the event of an alleged violation of the agreement would be a matter for the Security Council -- and for that Council alone -- and that the ordinary rules of procedure of the Security Council, including, of course, the unanimity rule (veto) would apply in that case.<sup>10</sup> The Soviet delegate also drew the attention of the members of the Commission to an apparent contradiction between the proposals of the representative of the United States and the General Assembly Resolution of 14 December 1946 Governing the General Regulation and Reduction of Armaments.<sup>11</sup> He

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7. UNAEC/P.V.19, p.3; UNAEC/P.V.13, p.42.

8. UNAEC/P.V.16, p.3.

9. UNAEC/P.V.10, p. 145.

10. ibid., p. 145.

11. For text of this resolution see Appendix F.

pleaded for immediate correction in this regard.<sup>12</sup> He reminded the members of the Commission that while the proposal of the United States representative, submitted on 5 December 1946, provided for the establishment of international control of atomic energy "within the framework of the United Nations Organisation", the resolution of the General Assembly of 14 December 1946 provided for the international system of control of atomic energy "within the framework of the Security Council." Therefore, argued the Soviet delegate, the findings and recommendations of the Atomic Energy Commission must not be in contradiction to the Resolution of the General Assembly and must fully conform with that decision.<sup>13</sup> The fact that the United States' proposals provided for a voluntary relinquishment of the so-called "veto" by the permanent members of the Security Council did not change the situation as far as the Soviet Union was concerned; since any changes in the Charter presupposed a voluntary agreement on such changes by all the permanent members.<sup>14</sup>

The Soviet Union bitterly criticised also the proposal to grant to the international control organ ownership rights in plants producing atomic energy and in atomic raw materials, as contrary to the very idea of international control of atomic energy. For, in the opinion of the Soviet Union:

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12. UNAEC/P.V. 10, p. 144.

13. ibid., pp. 144-147.

14. ibid., pp. 145-146.

Ownership is not control, unless we are to reduce the idea of control to an absurdity, or to imply a kind of control of the organ by the organ. The very idea of international control precludes any possibility whatsoever of monopolistic ownership of atomic plants, even though such ownership were vested in an international organ. International control of atomic energy means a system of international measures based on the existence of plants for the production of atomic energy held by the States participating in such a system. The idea of an international organ owning atomic energy plants and atomic raw materials precludes, in point of fact, international control as such; and, conversely, international control precludes the idea of the control organ's owning plants.<sup>15</sup>

According to the Soviet delegate, the adoption of the idea of 'ownership' would mean that States would place at the disposal of the international organ an important branch of industry without any grounds for doing so.<sup>16</sup> "In fact, it would mean, in practice, that this branch of industry would be placed at the disposal of those who are in a position to carry the majority with them in such a control organ."<sup>17</sup> He accused the United States of having so conceived the international organ as to be its obedient instrument.<sup>18</sup> He asserted that such a situation would be impossible and inadmissible.

This criticism applied equally to the proposals to give this organ the right to manage plants and to grant

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15. UNAEC/P.V. 13, p. 44.

16. ibid, p. 44.

17. ibid., p. 44.

18. UNAEC/ P.V. 16, p. 6.

licences for the construction and operation of State factories and plants for the production of atomic energy. "The proposals regarding management and licensing cannot be justified, either by the technical organizational requirements of international control or by the political problems connected with its establishment. The adoption of this proposal, as well as the adoption of the proposal concerning ownership, is contrary to the very idea of international control and substitutes for the latter the idea of creating a sort of international supra-State trust."<sup>19</sup> Gromyko apprehended that nine-tenths of the trust's staff would be composed of the nationals of the United States and of countries partially or wholly dependent on the United States.<sup>20</sup>

All these proposals were radically unsound in yet another respect: they were contrary to the principle of national sovereignty.<sup>21</sup> For the Soviet Union, "they are the gross expression of the attempts of certain circles to transfer their familiar methods of domestic bossing to the sphere of international relations in order to grab important economic positions in other countries, bind these other countries hand and foot and thus strengthen their positions in the sphere of the development of atomic industry and not of atomic industry alone. Such a system of "control" would have a particularly baneful influence on small and less influential countries which could

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19. UNAEC/P.V. 13, p. 45.

20. UNAEC/P.V.19, p.12; UNAEC/P.V.16, p.6.

21. UNAEC/P.V. 13, p. 45.

not defend their interests properly."<sup>22</sup> Gromyko warned the nations that with the aid of this principle of "own and rule" the US monopolies were striving to obtain possession of atomic raw materials throughout the world while leaving their own atomic industry free of any control at all.<sup>23</sup> He, however, did not agree with the implicit view of the authors of these (majority's) proposals that, in the age of atomic energy, the sovereignty and independence of States have lost their significance.<sup>24</sup> Such views, according to him, were not only unfounded but also dangerous. "Dangerous because they express the definite intention of individual powerful States, and of the ultra-expansionist groups within those States, to strengthen their political and economic positions at the expense of other countries and peoples."<sup>25</sup> All this, said Gromyko, fitted into the framework of the general expansionist policy of the ruling circles of the United States.<sup>26</sup>

Granting that international control of atomic energy called for corresponding regulation of atomic production and an appropriate distribution of atomic raw materials amongst the various countries, Gromyko suggested that this task could,

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22. ibid., p. 45.

23. UNAEC/P.V. 19, pp. 9-10.

24. UNAEC/P.V. 13, p. 45.

25. ibid., p. 45.

26. UNAEC/P.V. 16, p.7.

however, be solved in a simple but legitimate fashion by an appropriate system of quotas.<sup>27</sup> He felt that the regulation by quota of atomic production and of the distribution of atomic raw materials could ensure each country its due place in accordance with the interests of both that country and of the United Nations as a whole. He further suggested that such a quota system could be established by concluding a special convention, as had been proposed by the USSR. He observed that the idea of establishing a quota system and of concluding for this purpose a separate convention, had not yet been sufficiently studied in the Commission. He even hinted that this proposal might facilitate agreement not only on this but also on a number of other important questions.<sup>28</sup>

Gromyko reminded the Commission of the rejection by the US delegation of the amendment of the USSR to the First Report of the Atomic Energy Commission<sup>29</sup> which provided that "control and inspection on the part of an international organ shall be applied in regard to all existing plants for the production of ultimate atomic materials (nuclear fuel) immediately after the entry into force of an appropriate convention or conventions and the establishment of the international control organ."<sup>30</sup> He expressed surprise at the attitude of the United States in particular, and of several other governments, towards this proposal. He drew the attention of the

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27. UNAEC/P.V.13, p.46. See also UNAEC/P.V.16, p.9.

28. ibid., p. 45.

29. ibid., pp.47-50.

30. International Control of Atomic Energy: Policy at the Crossroads, p. 74.

members to the fact that since the very first meeting of the Commission the delegation of the United States had constantly pushed into the background the question of establishing measures of control and inspection of installations producing nuclear fuel and had constantly stressed the necessity of establishing control of the sources of raw materials.<sup>31</sup> According to Gromyko, by refusing to place its own atomic installations under international control and inspection simultaneously with all other installations and sources of raw material, the United States had clearly shown that it would like to lay its hands on the sources of raw material in other countries by means of an appropriate international organ in which it (US) hoped to be in command.<sup>32</sup> He asked the members of the Commission rhetorically whether there was any logic in the proposal that "we should begin by establishing control of atomic raw materials and leave aside the question of establishing control and inspection of installations producing atomic weapons."<sup>33</sup>

Gromyko also drew the attention of the members to the fact that the United States had practically put a veto on the agreement reached by the majority of the members of the Commission on the question of the destruction of the existing stockpiles of atomic weapons.<sup>34</sup> The USSR had proposed that these weapons

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31. UNAEC/P.V. 15, p. 5.

32. ibid., p. 5.

33. ibid., p. 5.

34. ibid., pp.5-6.

should be destroyed and the nuclear fuel contained in them should be used for peaceful purposes. Baruch too had actually told the members that the United States would dispose of existing bomb stocks in accordance with the terms of the treaty; but it turned out after the debate in the United Nations had got under way that the disposition the United States had in mind was a transfer to the international agency to be used for possible "enforcement" measures.<sup>35</sup> In Gromyko's opinion, this bespoke the aggressive aims of the United States.

Gromyko also decried the attempts being made to prove that only the United States proposals conformed to the scientific and technical requirements of an effective system of control.<sup>36</sup> He went on to assert that the scientific and technical report only confirmed the correctness of the position taken by the Soviet Union.<sup>37</sup>

The Soviet delegation also wondered how the United States, which had all along been stressing inspection as an effective means of control, had suddenly come to believe that inspection was not, after all, a sufficient measure of control.<sup>38</sup>

As a fitting finale to this bitter criticism, in the 19th meeting of the Commission, Gromyko's associate Jacob Malik

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35. Barnet, op.cit., p. 16; See also UNAEC/P.V.19, p.14.

36. UNAEC/P.V. 16, p. 10.

37. ibid., p. 10.

38. UNAEC/P.V. 19, pp.14-16.



launched himself into a peroration by which he vainly sought to fill the minds of the members of the Commission with the spectre of the dire consequences that would follow any acceptance of the "principle of stages"<sup>39</sup> which was the cornerstone of the "majority" plan.

Malik found it highly objectionable that the United States should impose its system of control of atomic raw materials on the whole world, while openly refusing to set any definite time-limit for the introduction of the control of the subsequent stages of atomic production, and in its turn, to assume any obligation in that respect. He reiterated the view that the very idea of control which would be exercised, in the beginning, only on raw materials, was in itself absurd and utterly unjustified. He alleged that the ruling circles of the United States wanted to transform their country into the sole owner of all the atomic plants in the world, and the rest of the world into a source of raw material for ~~these~~ plants by means of a control organ which would be labelled "international", but which, in reality, would be completely governed by the US monopolies and their agents. He deplored the attempts being made by the United States through all channels of propaganda to prove at any cost that the most important and dangerous link in the whole chain of atomic production was atomic raw materials. He apprehended that, according to the authors of the American Plan, all subsequent stages of atomic production, such as the

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39. ibid., pp. 9-12.

production of nuclear fuels, were to be left uncontrolled until such time as effective control of the production of atomic raw materials had been fully and finally established; until all sources of those raw materials throughout the world had been studied; and until the territories of the States had been most carefully explored, by prospectors and surveyors and above all by means of aerial photography, for deposits of uranium and thorium.

He emphasized the fact, based on certain calculations contained in the First Report, that for the complete establishment of effective control of atomic raw materials, not less than several decades would be needed. He reasoned that the ruling circles of the United States would, thus, for many decades, have a formal basis for saying that, so long as effective control of the first stage of atomic production -- that is, of raw materials -- had not yet been fully and definitely established, inasmuch as not all territories had been investigated, the United States could not agree to the introduction of international control of the subsequent stages, i.e., of plants for the production of atomic energy, nor accept, for the same formal reasons, the prohibition of the atomic weapons.

This, according to Malik, meant that the great monopolies of the United States, acting through the instrumentality represented by the atomic "super-trust", would, during the whole of this long drawn-out period, be acquiring uranium and thorium deposits in all the countries of the world.

It was his foreboding that in the meantime, atomic industry in the United States would continue to stockpile atomic weapons; that it would publish every six months official statements on the increased destructiveness of these weapons brandishing them for the whole world to see; and that it would pursue its policy of "atomic diplomacy" and of expansionism in its endeavour to dominate the world. Such, said Malik, is the nature of the notorious "Baruch Plan" for international control.

He cited, as a corroborative evidence of the evil intentions of the United States in this regard, the artificial division of armaments into the categories of conventional and unconventional, which the United States sought to impose on the United Nations in order to conceal and withhold information regarding atomic weapons<sup>40</sup> — weapons of aggression and mass destruction. He made it plain that the "object of all this was to collect, for the purposes of intelligence and espionage, as much information as possible about the armed forces and armaments of all countries of the world for the military staffs of the aggressive blocs, set up by the ruling circles of the USA, which conceal and withhold information about the atomic weapon from the peoples of the world on the pretext that it was not included in the category of conventional armaments."<sup>41</sup>

The Soviet delegation blamed the United States for submitting to the Commission such proposals as had little or no

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40. ibid., pp. 12-13.

41. ibid., p. 13.

chance of being accepted by the USSR. It held the United States and the other Great Powers wholly responsible for the impasse in the Commission and pleaded with them to make such proposals as would command the acceptance of the Soviet Union.<sup>42</sup>

This phantasmagorical account of the consequences that would flow from an hypothetical acceptance of the Baruch Plan was to be the swansong of the Soviet delegation in the Atomic Energy Commission. For, by then, the Second Report<sup>43</sup> and even the Third Report to the Security Council had already been adopted by the Commission. The former had been adopted on September 11, 1947 — ten nations voting in favour, the Soviet Union against and Poland abstaining. The Second Report was a mere elaboration and technical elucidation of the First Report. The adoption of the Second Report by the Commission over Soviet opposition had only led to a further divergence in the views of the contending sides, and recriminations had got more bitter. Gromyko had already declared that "the US proposals cannot be accepted in any way by the Soviet Union either as a whole or in separate parts."<sup>44</sup> The discussions in the Commission had degenerated into an acrimoniously-fought propaganda duel of words. And "both sides were intent upon justifying their rigid positions before world opinion and largely ignored each other."<sup>45</sup> It had soon become clear to everyone in the Commission that no agreement was possible.

42. See UNAER/P.V.18, pp.2-8; UNAEC/P.V.19, pages 9, 14 and 16.

43. For summary of the Second Report see Appendix H.

44. International Control of Atomic Energy: Growth of a Policy, p.22.

45. Barnet, op.cit., p.22.

Announcing an 'impasse', the Third Report<sup>46</sup> (with 9 States voting in its favour and 2, the USSR and the Ukrainian Republic, opposing), on May 17, 1948, had proposed suspending the Commission till the Security Council, or the sponsoring powers, in consultation, had found a basis for agreement. A Soviet veto had blocked a 9 to 2 approval by the Security Council of the Commission Reports (June 22, 1948) and then the documents had been passed on to the General Assembly of the United Nations. On November 4, 1948, the latter, meeting in Paris, had approved the "majority plan" by 40 votes to 6 and also asked the sponsoring powers to enter into consultations. The Commission itself had resumed its work on February 18, 1949, nine months after its suspension, but the ensuing total deadlock soon obliged them to put an end to all deliberations.

The six power talks actually took place in August, 1949, but proved to be fruitless. Meanwhile the USSR had exploded an atomic bomb. (The following year President Truman ordered the United States' Atomic Energy Commission to proceed with work on the Hydrogen Bomb). On November 23, 1949, the General Assembly once again voted, by 49 votes to the Soviet Bloc's 5, with 3 abstentions, to approve the "majority plan", while urging once again further consultations among the "six powers".<sup>47</sup> Talks started on December 20, but were broken off

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46. The Third Report was a mere rearrangement of old documents, reflecting the state of affairs in the Commission.

47. The five permanent members of the Security Council plus Canada.

on January 19, 1950, when the Soviet Union staged a walk-out over the issue of Nationalist China's participation in the United Nations. The UNAEC itself had remained in a state of self-suspension until it was eventually replaced by the new Disarmament Commission in 1952.

## CHAPTER IV

CONCLUDING REMARKS

A weapon of great destructive power was inhumanly demonstrated soon after it had been invented. The political heads of three countries which were involved in the making of this weapon met in response to the mounting pressure of world public opinion and issued an Agreed Declaration embodying their earnest desire to set up an international Commission with a view to controlling the weapon. A mighty Continental nation which had emerged victorious in the recent World War soon agreed to be a party to this declaration. Accordingly, the nations of the earth set up a Commission to go into the question of control, under the auspices of an international organisation which had lately come into being as an aftermath of the War. The members of the Commission met more than a score of times over a period of four years; appointed committees and sub-committees to assist in their work; and quarelled interminably over procedural matters. They made long and, often, tedious speeches as if the success of the work of the Commission depended upon the prolixity of its participants. In the end, they could agree neither on the prerequisites nor on the nature nor even on the extent of control. This lack of agreement among its members led, at first, to the suspension and eventually to the dissolution of the Commission. This drama thus enacted in the UNAEC had all the elements of a Greek tragedy.

The two rival plans of control which led to this tragedy have been discussed at length in the preceding two chapters. Their chief characteristic was their utter lack of realism. According to the American Plan, whose lack of realism lay in its obsession with "total" security, the United States would wait until the last moment to divest itself of her atomic weapons, and even then they were to be turned over to an international agency where she would have a decisive influence for many years to come. If all the inspection and control machinery failed, the disarmament treaty was ultimately to be enforced with the very weapons which it was designed to eliminate. Thus the United States seemed bent on retaining an actual or, at the worst, a virtual monopoly of the bombs.

Equally unrealistic was the American insistence on doing away with the "veto" in all questions of atomic control. As Blackett rightly observes: "Since it is roughly true to say that the distribution of power among the nations is such that sanctions could not be applied at present against at any rate some of the great powers, it is essentially correct that these particular great powers should have the right of vetoing the application of sanctions against themselves."<sup>1</sup> Assuming that an international system of control afforded adequate danger signals, the detection of violations, if they were of sufficient

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1. P.M.S. Blackett, "Atomic Energy and the UNO Atomic Energy Commission", Bulletin of the Atomic Scientists, I, No.8 (April 1, 1946), p. 14.



magnitude, would lead to war. Again, even if the enforcement measures by the Security Council required majority of votes instead of unanimity among the permanent members, it would still lead to war — although a war in this case would be under the auspices of the United Nations.<sup>2</sup>

Further, the refusal of the United States to prohibit and destroy existing stockpiles of atomic weapons before a system of control was actually instituted, as well as its reluctance to extend measures of control simultaneously to all stages of atomic production, reflected merely her national security requirements. The United States had so far been invulnerable to external attack. But the advent of nuclear weapons seemed, for the first time in their history, to make their homeland vulnerable to an atomic strike. The Baruch Plan would have removed this possible threat to their security. "Thus, despite its daring and idealistic enlightenment, the Baruch Plan was truly a reflection of American national interest. The United States had nothing to lose and everything to gain through implementation of the Baruch Plan in a world of rapid technological advance where America's monopoly on atomic energy was at best a transient one."<sup>3</sup>

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2. For a masterly exposition of the significance of the "veto" power of the permanent members of the Security Council in the functioning of the United Nations, see Inis L. Claude, Jr., Swords into Plowshares: The Problems and Progress of International Organisation (New York, 1963), pp. 80-96 and 142-157.
  3. Robert Gilpin, American Scientists and Nuclear Weapons Policy (Princeton, 1962), p. 56.

Furthermore, much of the vagueness of the American proposals could be explained by the heavy reliance of post-war American strategy on nuclear weapons as an antidote to the menacing presence of the Red Army in the heart of Europe; for, domestic pressures in the United States had resulted in a rapid demobilisation of its armed forces after the war.

Moreover, "the Baruch Plan had certain features that were calculated to arouse Soviet suspicion and resentment and few features designed to make it attractive. Economic control by a group of capitalist nations, broad provisions for inspection, moralistic talk about "punishment", and what the Russians regarded as the particularly ominous schedule of disarmament convinced them that the Baruch Plan was a shrewd diplomatic trick to preserve American military superiority."<sup>4</sup> According to Blackett, even the implementation of the first stage in the Baruch Plan, viz., an unlimited world-wide survey for the raw materials of atomic energy, "would have given the UNO inspectors - and hence the American chiefs of State - a fairly complete target map of the U.S.S.R., even if it did not develop into a complete system of military and industrial espionage."<sup>5</sup>

Indeed, the Soviet Union had no incentive to accept the American proposals. The Russians rightly calculated that

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4. Richard J. Barnet, Who Wants Disarmament? (Boston, 1960), p. 17.

5. P.M.S. Blackett, Military and Political Consequences of Atomic Energy (London, 1948), p. 139. Blackett's work is a masterpiece of its genre.

time was on their side and hoped to negotiate from a position of greater strength. They not only retained a substantial portion of their mammoth army, but entered on a frantic effort to develop nuclear weapons of their own. The atomic policy of the Soviet Union reflected all the ambivalence of a Power which did not have the bomb at the time of negotiations but was in the process of soon acquiring one. Besides, the rapid demobilisation of the American armed forces must have convinced the Soviet Union that the United States would not risk a "preventive war". The United States, presumably, did not also have a sufficient number of bombs at that time to wage a successful preventive war against the Soviet Union.

The opposition of the Soviet Union to the proposal to do away with the "veto" power and her insistence on virtual national control of atomic energy could be explained by its desire to develop her own stockpile of atomic weapons unhampered by the control of an international body dominated by the United States.

The plan of control, if it could be called as such, proposed by the Soviet Union was, however, not only unrealistic but also implausible. The Soviet Union sought to neutralize the advantage of the American monopoly of the bomb while retaining the freedom to develop its own atomic capacity. The Soviet proposals for control, if implemented, would have deprived the Americans of their atomic weapons, while the Soviet Union would have retained its vast superiority in land forces.

Both the sides failed to realise that an essential basis for an agreement was a realistic appreciation both of the actual power position in the world, and of the effect on this power position of the proposed system of control of atomic weapons. Both the sides vainly sought to persuade the adversary to undertake unilateral disarmament and made as much propaganda capital as possible from each other's refusal to do so.

Thus the politics of the Cold War found another forum of propaganda in the Commission. The rancour and acrimony which marked its proceedings further intensified the Cold War. The views of the other members of the Commission who had no specific proposals of their own to make, generally reflected their respective political alignments. They tried to safeguard their national interests only to the extent that they did not come into conflict with the requirements of the plan of control proposed by the leaders of the rival groupings in the Cold War.

Finally, to recapitulate, both the plans of control were unrealistic. They were geared to the respective national security interests of the United States and the Soviet Union. Whereas the American Plan sought to obtain absolute security for the United States, the Soviet Plan was a reaction to the threat posed, on the morrow of Soviet victory, to her hard-won sense of security. Both the plans required the adversary to disarm unilaterally. They were, moreover, designed to be riskless adventures with an unmistakable flavour of propaganda. Both the sides acknowledged that the problem of control of atomic energy could not be solved in the framework of old ideas.

None the less, they made no departure whatever from the traditional framework of "power politics".

Negotiations for disarmament, like the web of Penelope, have been a constant and, so far, a fruitless endeavour. Penelope, the wife of Ulysses and model of all domestic virtues, remained faithful to him during his long absence at the seige of Troy in spite of having many suitors. It was said of Penelope that she merely pretended, for four years, to be weaving a shroud for her father-in-law without meaning to make any progress in her work. According to Homer, this was one of her many stratagems by which she could keep her importunate suitors away. In the Homeric legend, this clever lady made a mere show of activity until Ulysses returned home and slew all her suitors. Modern statesmen, wedded as they are to the furtherance of their national interests, are like the Penelope of the Classical Greek Mythology. After four years of intensive work they made no progress whatever in controlling a weapon of great destructive power. They merely made a show of serious deliberation with a view to wooing world public opinion in their favour, until their respective security interests and international obligations impelled them to destroy all possibility of agreement.

## APPENDIX-A

## NIELS BOHR'S MEMORANDUM TO PRESIDENT ROOSEVELT, JULY 1944

It certainly surpasses the imagination of anyone to survey the consequences of the project in years to come, where, in the long run, the enormous energy sources which will be available may be expected to revolutionize industry and transport. The fact of immediate preponderance is, however, that a weapon of an unparalleled power is being created which will completely change all future conditions of warfare.

Quite apart from the question of how soon the weapon will be ready for use and what role it may play in the present war, this situation raises a number of problems which call for most urgent attention. Unless, indeed, some agreement about the control of the use of the new active materials can be obtained in due time, any temporary advantage, however great, may be outweighed by a perpetual menace to human security.

Ever since the possibilities of releasing atomic energy on a vast scale came in sight, much thought has naturally been given to the question of control, but the further the exploration of the scientific problems concerned is proceeding, the clearer it becomes that no kind of customary measures will suffice for this purpose, and that the terrifying prospect of a future competition between nations about a weapon of such formidable character can only be avoided through a universal agreement in true confidence.

In this connexion it is particularly significant that the enterprise, immense as it is, has still proved far smaller than might have been anticipated, and that the progress of the work has continually revealed new possibilities for facilitating the production of the active materials and of intensifying their efforts.

The prevention of a competition prepared in secrecy will therefore demand such concessions regarding exchange of information and openness about industrial efforts, including military preparations, as would hardly be conceivable unless all partners were assured of a compensating guarantee of common security against dangers of unprecedented acuteness.

The establishment of effective control measures will of course involve intricate technical and administrative problems, but the main point of the argument is that the accomplishment of the project would not only seem to necessitate but should also, due to the urgency of mutual confidence, facilitate a new approach to the problems of international relationship.

The present moment where almost all nations are entangled in a deadly struggle for freedom and humanity might, at first sight, seem most unsuited for any committing arrangement concerning the project. Not only have the aggressive powers still great military strength, although their original plans of world domination have been frustrated and it seems certain that they must ultimately surrender, but even when this

happens, the nations united against aggression may face grave causes of disagreement due to conflicting attitudes towards social and economic problems.

A closer consideration, however, would indicate that the potentialities of the project as a means of inspiring confidence under these very circumstances acquire real importance. Moreover, the present situation affords unique possibilities which might be forfeited by a postponement awaiting the further development of the war situation and the final completion of the new weapon....

In view of these eventualities the present situation appears to offer a most favourable opportunity for an early initiative from the side which by good fortune has achieved a lead in the efforts of mastering mighty forces of Nature hitherto beyond human reach.

Without impeding the immediate military objectives, an initiative, aiming at forestalling a fateful competition, should serve to uproot any cause of distrust between the powers on whose harmonious collaboration the fate of coming generations will depend.

Indeed, it would appear that only when the question is raised among the united nations as to what concessions the various powers are prepared to make as their contribution to an adequate control arrangement, will it be possible for any one of the partners to assure himself of the sincerity of the intentions of the others.



Of course, the responsible statesmen alone can have insight as to the actual political possibilities. It would, however, seem most fortunate that the expectations for a future harmonious international cooperation, which have found unanimous expressions from all sides within the united nations so remarkably correspond to the unique opportunities which, unknown to the public, have been created by the advancement of science.

Many reasons, indeed, would seem to justify the conviction that an approach with the object of establishing common security from ominous menaces, without excluding any nation from participating in the promising industrial development which the accomplishment of the project entails, will be welcomed, and be met with loyal cooperation in the enforcement of the necessary far-reaching control measures.

It is in such respects that helpful support may perhaps be afforded by the world-wide scientific collaboration which for years has embodied such bright promises for common human striving. Personal connexions between scientists of different nations might even offer means of establishing preliminary and unofficial contact.

It need hardly be added that any such remark or suggestion implies no underrating of the difficulty and delicacy of the steps to be taken by the statesmen in order to obtain an arrangement satisfactory to all concerned, but

aims only at pointing to some aspects of the situation which might facilitate endeavours to turn the project to the lasting benefit of the common cause.

## APPENDIX-B

## THE 'FRANCK REPORT'

A REPORT TO THE SECRETARY OF WAR, JUNE 1945

## I. Preamble

The only reason to treat nuclear power differently from all other developments in the field of physics is the possibility of its use as a means of political pressure in peace and sudden destruction in war. All present plans for the organization of research, scientific and industrial development, and publication in the field of nucleonics are conditioned by the political and military climate in which one expects those plans to be carried out. Therefore, in making suggestions for the post-war organization of nucleonics, a discussion of political problems cannot be avoided. The scientists on this Project do not presume to speak authoritatively on problems of national and international policy. However, we found ourselves, by the force of events, during the last five years, in the position of a small group of citizens cognizant of a grave danger for the safety of this country as well as for the future of all the other nations, of which the rest of mankind is unaware. We therefore feel it is our duty to urge that the political problems, arising from the mastering of nuclear power, be recognized in all their gravity, and that appropriate steps be taken for their

study and the preparation of necessary decisions. We hope that the creation of the Committee by the Secretary of War to deal with all aspects of nucleonics, indicates that these implications have been recognized by the government. We believe that our acquaintance with the scientific elements of the situation and prolonged preoccupation with its world-wide political implications, imposes on us the obligation to offer to the Committee some suggestions as to the possible solution of these grave problems.

Scientists have often before been accused of providing new weapons for the mutual destruction of nations, instead of improving their well-being. It is undoubtedly true that the discovery of flying, for example, has so far brought much more misery than enjoyment and profit to humanity. However, in the past, scientists could disclaim direct responsibility for the use to which mankind had put their disinterested discoveries. We feel compelled to take a more active stand now because the success which we have achieved in the development of nuclear power is fraught with infinitely greater dangers than were all the inventions of the past. All of us, familiar with the present state of nucleonics, live with the vision before our eyes of sudden destruction visited on our own country, of a Pearl Harbour disaster repeated in thousand-fold magnification in every one of our major cities.

In the past, science has often been able to provide also new methods of protection against new weapons of aggression

it made possible, but it cannot promise such efficient protection against the destructive use of nuclear power. This protection can come only from the political organization of the world. Among all the arguments calling for an efficient international organization for peace, the existence of nuclear weapons is the most compelling one. In the absence of an international authority which would make all resort to force in international conflicts impossible, nations could still be diverted from a path which must lead to total mutual destruction, by a specific international agreement barring a nuclear armaments race.

## II. Prospects of Armaments Race

It could be suggested that the danger of destruction by nuclear weapons can be avoided — at least as far as this country is concerned — either by keeping our discoveries secret for an indefinite time, or else by developing our nuclear armaments at such a pace that no other nations would think of attacking us from fear of overwhelming retaliation.

The answer to the first suggestion is that although we undoubtedly are at present ahead of the rest of the world in this field, the fundamental facts of nuclear power are a subject of common knowledge. British scientists know as much as we do about the basic wartime progress of nucleonics — if not of the specific processes used in our engineering developments — and the role which French nuclear physicists have

played in the pre-war development of this field, plus their occasional contact with our Projects will enable them to catch up rapidly, at least as far as basic scientific discoveries are concerned. German scientists, in whose discoveries the whole development of this field originated, apparently did not develop it during the war to the same extent to which this has been done in America: but to the last day of the European war, we were living in constant apprehension as to their possible achievements. The certainty that German scientists were working on this weapon and that their government would certainly have no scruples against using it when available, was the main motivation of the initiative which American scientists took in urging the development of nuclear power for military purposes on a large scale in this country. In Russia, too, the basic facts and implications of nuclear power were well understood in 1940, and the experience of Russian scientists in nuclear research is entirely sufficient to enable them to retrace our steps within a few years, even if we should make every attempt to conceal them. Even if we can retain our leadership in basic knowledge of nucleonics for a certain time by maintaining secrecy as to all results achieved on this and associated Projects, it would be foolish to hope that this can protect us for more than a few years.

It may be asked whether we cannot prevent the development of military nucleonics in other countries by a monopoly on the raw materials of nuclear power. The answer is that even though the largest now known deposits of uranium ores are

under the control of powers which belong to the 'western' group (Canada, Belgium, and British India), the old deposits in Czechoslovakia are outside this sphere. Russia is known to be mining radium on its own territory; and even if we do not know the size of the deposits discovered so far in the U.S.S.R., the probability that no large reserves of uranium will be found in a country which covers one-fifth of the land area of the earth (and whose sphere of influence takes in additional territory) is too small to serve as a basis for security. Thus, we cannot hope to avoid a nuclear armament race either by keeping secret from the competing nations the basic scientific facts of nuclear power or by cornering the raw materials required for such a race.

We now consider the second of the two suggestions made at the beginning of this section, and ask whether we could not feel ourselves safe in a race of nuclear armaments by virtue of our greater industrial potential, including greater diffusion of scientific and technical knowledge, greater volume and efficiency of our skilled labour corps, and greater experience of our management — all the factors whose importance has been so strikingly demonstrated in the conversion of this country into an arsenal of the Allied Nations in the present war. The answer is that all that these advantages can give us is the accumulation of a larger number of bigger and better atomic bombs.

However, such a quantitative advantage in reserves of bottled destructive power will not make us safe from sudden attack. Just because a potential enemy will be afraid of being 'outnumbered and outgunned', the temptation for him may be overwhelming to attempt a sudden unprovoked blow — particularly if he should suspect us of harbouring aggressive intentions against his security or his sphere of influence. In no other type of warfare does the advantage lie so heavily with the aggressor. He can place his 'infernal machines' in advance in all our major cities and explode them simultaneously, thus destroying a major part of our industry and a large part of our population, aggregated in densely populated metropolitan districts. Our possibilities of retaliation — even if retaliation should be considered adequate compensation for the loss of millions of lives and destruction of our largest cities — will be greatly handicapped because we must rely on aerial transportation of the bombs, and also because we may have to deal with an enemy whose industry and population are dispersed over a large territory.

In fact, if the race for nuclear armaments is allowed to develop, the only apparent way in which our country can be protected from the paralysing effects of a sudden attack is by dispersal of the populations of our major metropolitan cities. As long as nuclear bombs remain scarce (ie. as long as uranium remains the only basic material for their fabrication), efficient dispersal of our industry and the scattering of our metropolitan population will considerably decrease the temptation to attack us by nuclear weapons.



At present, it may be that atomic bombs can be detonated with an effect equal to that of 20,000 tons of TNT. One of these bombs could then destroy something like three square miles of an urban area. Atomic bombs containing a larger quantity of active material but still weighing less than one ton may be expected to be available within ten years which could destroy over ten square miles of a city. A nation able to assign ten tons of atomic explosives for a sneak attack on this country, can then hope to achieve the destruction of all industry and most of the population in an area from 500 square miles upwards. If no choice of targets, with a total area of five hundred square miles of American territory, contains a large enough fraction of the nation's industry and population to make their destruction a crippling blow to the nation's war potential and its ability to defend itself, then the attack will not pay, and may not be undertaken. At present, one could easily select in this country a hundred areas of five square miles each whose simultaneous destruction would be a staggering blow to the nation. Since the area of the United States is about three million square miles, it should be possible to scatter its industrial and human resources in such a way as to leave no 500 square miles important enough to serve as a target for nuclear attack.

We are fully aware of the staggering difficulties involved in such a radical change in the social and economic structure of our nation. We felt, however, that the dilemma had to be stated, to show what kind of alternative methods of

protection will have to be considered if no successful international agreement is reached. It must be pointed out that in this field we are in a less favourable position than nations which are either now more diffusely populated and whose industries are more scattered, or whose governments have unlimited power over the movement of population and the location of industrial plants.

If no efficient international agreement is achieved, the race for nuclear armaments will be on in earnest not later than the morning after our first demonstration of the existence of nuclear weapons. After this, it might take other nations three or four years to overcome our present head start, and eight or ten years to draw even with us if we continue to do intensive work in this field. This might be all the time we would have to bring about the relocation of our population and industry. Obviously, no time should be lost in inaugurating a study of this problem by experts.

### III. Prospects of Agreement

The consequences of nuclear warfare, and the type of measures which would have to be taken to protect a country from total destruction by nuclear bombing, must be as abhorrent to other nations as to the United States. England, France, and the smaller nations of the European continent, with their congeries of people and industries, would be in a particularly desperate situation in the face of such a

threat. Russia and China are the only great nations at present which could survive a nuclear attack. However, even though these countries may value human life less than the peoples of Western Europe and America, and even though Russia, in particular, has an immense space over which its vital industries could be dispersed and a government which can order this dispersion the day it is convinced that such a measure is necessary — there is no doubt that Russia, too, will shudder at the possibility of a sudden disintegration of Moscow and Leningrad, almost miraculously preserved in the present war, and of its new industrial cities in the Urals and Siberia. Therefore, only lack of mutual trust, and not lack of desire for agreement, can stand in the path of an efficient agreement for the prevention of nuclear warfare. The achievement of such an agreement will thus essentially depend on the integrity of intentions and readiness to sacrifice the necessary fraction of one's own sovereignty, by all the parties to the agreement.

One possible way to introduce nuclear weapons to the world — which may particularly appeal to those who consider nuclear bombs primarily as a secret weapon developed to help win the present war — is to use them without warning on appropriately selected objects in Japan.

Although important tactical results undoubtedly can be achieved by a sudden introduction of nuclear weapons, we nevertheless think that the question of the use of the very

first available atomic bombs in the Japanese war should be weighed very carefully, not only by military authorities, but by the highest political leadership of this country.

Russia, and even allied countries which bear less mistrust of our ways and intentions, as well as neutral countries may be deeply shocked by this step. It may be very difficult to persuade the world that a nation which was capable of secretly preparing and suddenly releasing a new weapon, as indiscriminate as the rocket bomb and a thousand times more destructive, is to be trusted in its proclaimed desire of having such weapons abolished by international agreement. We have large accumulations of poison gas, but do not use them, and recent polls have shown that public opinion in this country would disapprove of such a use even if it would accelerate the winning of the Far Eastern war. It is true that some irrational element in mass psychology makes gas poisoning more revolting than blasting by explosives, even though gas warfare is in no way more 'inhuman' than the war of bombs and bullets. Nevertheless, it is not at all certain that American public opinion, if it could be enlightened as to the effect of atomic explosives, would approve of our own country being the first to introduce such an indiscriminate method of wholesale destruction of civilian life.

Thus, from the 'optimistic' point of view — looking forward to an international agreement on the prevention of nuclear warfare — the military advantages and the saving of

American lives achieved by the sudden use of atomic bombs against Japan may be outweighed by the ensuing loss of confidence and by a wave of horror and repulsion sweeping over the rest of the world and perhaps even dividing public opinion at home.

From this point of view, a demonstration of the new weapon might best be made, before the eyes of representatives of all the United Nations, on the desert or a barren island. The best possible atmosphere for the achievement of an international agreement could be achieved if America could say to the world, 'You see what sort of a weapon we had but did not use. We are ready to renounce its use in the future if other nations join us in this renunciation and agree to the establishment of an efficient control.'

After such a demonstration the weapon might perhaps be used against Japan if the sanction of the United Nations (and if public opinion at home) were obtained, perhaps after a preliminary ultimatum to Japan to surrender or at least to evacuate certain regions as an alternative to their total total destruction. This may sound fantastic, but in nuclear weapons we have something entirely new in order of magnitude of destructive power, and if we want to capitalize fully on the advantage their possession gives us, we must use new and imaginative methods.

It must be stressed that if one takes the pessimistic point of view and discounts the possibility of an effective international control over nuclear weapons at the

present time, then the advisability of an early use of nuclear bombs against Japan becomes even more doubtful — quite independently of any humanitarian consideration. If an international agreement is not concluded immediately after the first demonstration, this will mean a flying start towards an unlimited armaments race. If this race is inevitable, we have every reason to delay its beginning as long as possible in order to increase our head start still further. The benefit to the nation, and the saving of American lives in the future, achieved by renouncing an early demonstration of nuclear bombs and letting the other nations come into the race only reluctantly, on the basis of guesswork and without definite knowledge that the 'thing does work', may far outweigh the advantages to be gained by the immediate use of the first and comparatively inefficient bombs in the war against Japan. On the other hand, it may be argued that without an early demonstration it may prove difficult to obtain adequate support for further intensive development of nucleonics in this country and that thus the time gained by the postponement of an open armaments race will not be properly used. Furthermore one may suggest that other nations are now, or will soon be, not entirely unaware of our present achievements, and that consequently the postponement of a demonstration may serve no useful purpose as far as the avoidance of an armaments race is concerned, and may only create additional mistrust, thus worsening rather than improving the chances of an ultimate accord on the international control of nuclear explosives.

Thus, if the prospects of an agreement will be considered poor in the immediate future, the pros and cons of an early revelation of our possession of nuclear weapons to the world — not only by their actual use against Japan, but also by a prearranged demonstration — must be carefully weighed by the supreme political and military leadership of the country, and the decisions should not be left to the considerations of military tactics alone.

One may point out that scientists themselves have initiated the development of this 'secret weapon' and it is therefore strange that they should be reluctant to try it out on the enemy as soon as it is available. The answer to this question was given above — the compelling reason for creating this weapon with such speed was our fear that Germany had the technical skill necessary to develop such a weapon and that the German government had no moral restraints regarding its use.

Another argument which could be quoted in favour of using atomic bombs as soon as they are available is that so much taxpayers' money has been invested in these Projects that the Congress and the American public will demand a return for their money. The attitude of American public opinion, mentioned earlier, in the matter of the use of poison gas against Japan, shows that one can expect the American public to understand that it is sometimes desirable to keep a weapon in readiness for use only in extreme emergency; and as soon as the potentialities of nuclear weapons are revealed to the American people, one can be sure that they will support all attempts to make the use of such weapons impossible.

Once this is achieved, the large installations and the accumulation of explosive material at present earmarked for potential military use will become available for important peacetime developments, including power production, large engineering undertakings, and mass production of radioactive materials. In this way, the money spent on wartime development of nucleonics may become a boon for the peacetime development of national economy.

#### IV. Method of International Control

We now consider the question of how an effective international control of nuclear armaments can be achieved. This is a difficult problem, but we think it soluble. It requires study by statesmen and international lawyers, and we can offer only some preliminary suggestions for such a study.

Given mutual trust and willingness on all sides to give up a certain part of their sovereign rights, by admitting international control of certain phases of national economy, the control could be exercised (alternatively or simultaneously) on two different levels.

The first and perhaps the simplest way is to ration the raw materials — primarily, the uranium ores. Production of nuclear explosives begins with the processing of large quantities of uranium in large isotope separation plants or huge production piles. The amounts of ore taken out of the ground at different locations could be controlled by resident agents of the international Control Board, and each nation could be allotted only



an amount which would make large-scale separation of fissionable isotopes impossible.

Such a limitation would have the drawback of making impossible also the development of nuclear power for peacetime purposes. However, it need not prevent the production of radioactive elements on a scale sufficient to revolutionize the industrial, scientific and technical use of these materials, and would thus not eliminate the main benefits which nucleonics promises to bring to mankind.

An agreement on a higher level, involving more mutual trust and understanding, would be to allow unlimited production, but keep exact bookkeeping on the fate of each pound of uranium mined. If in this way, check is kept on the conversion of uranium and thorium ore into pure fissionable materials, the question arises as to how to prevent accumulation of large quantities of such materials in the hands of one or several nations. Accumulations of this kind could be rapidly converted into atomic bombs if a nation should break away from international control. It has been suggested that a compulsory denaturation of pure fissionable isotopes may be agreed upon — by diluting them, after production, with suitable isotopes to make them useless for military purposes, while retaining their usefulness for power engines.

One thing is clear: any international agreement on prevention of nuclear armaments must be backed by actual and efficient controls. No paper agreement can be sufficient since

neither this nor any other nation can stake its whole existence on trust in other nations' signatures. Every attempt to impede the international control agencies would have to be considered equivalent to denunciation of the agreement.

It hardly needs stressing that we as scientists believe that any system of control envisaged should leave as much freedom for the peacetime development of nucleonics as is consistent with the safety of the world.

#### Summary

The development of nuclear power not only constitutes an important addition to the technological and military power of the United States, but also creates grave political and economic problems for the future of this country.

Nuclear bombs cannot possibly remain a 'secret weapon' at the exclusive disposal of this country for more than a few years. The scientific facts on which construction is based are well known to scientists of other countries. Unless an effective international control of nuclear explosives is instituted, a race for nuclear armaments is certain to ensue following the first revelation of our possession of nuclear weapons to the world. Within ten years other countries may have nuclear bombs, each of which, weighing less than a ton, could destroy an urban area of more than ten square miles. In the war to which such an armaments race is likely to lead, the United States, with its agglomeration of population and industry in comparatively few

metropolitan districts, will be at a disadvantage compared to nations whose population and industry are scattered over large areas.

We believe that these considerations make the use of nuclear bombs for an early unannounced attack against Japan inadvisable. If the United States were to be the first to release this new means of indiscriminate destruction upon mankind, she would sacrifice public support throughout the world, precipitate the race for armaments and prejudice the possibility of reaching an international agreement on the future control of such weapons.

Much more favourable conditions for the eventual achievement of such an agreement could be created if nuclear bombs were first revealed to the world by a demonstration in an appropriately selected uninhabited area.

In case chances for the establishment of an effective international control of nuclear weapons should have to be considered slight at the present time, then not only the use of these weapons against Japan, but even their early demonstration, may be contrary to the interests of this country. A postponement of such a demonstration will have in this case the advantage of delaying the beginning of the nuclear armaments race as long as possible.

If the government should decide in favour of an early demonstration of nuclear weapons, it will then have the possibility of taking into account the public opinion of this country and of the other nations before deciding whether these weapons should be used against Japan. In this way, other nations may assume a share

of responsibility for such a fateful decision.

Composed and signed by

J. FRANCK  
D. HUGHES  
L. SZILARD  
T. HOGNESS  
E. RABINOWITCH  
G. SEABORG  
C.J. NICKSON

## APPENDIX-C

The Three-Nation Agreed Declaration on  
Atomic Energy, Washington, November 15, 1945

## ATOMIC ENERGY

Agreed Declaration by

The President of the United States,  
The Prime Minister of the United Kingdom, and  
The Prime Minister of Canada.

THE PRESIDENT OF THE UNITED STATES, the Prime Minister of the United Kingdom, and the Prime Minister of Canada, have issued the following statement.

1. We recognize that the application of recent scientific discoveries to the methods and practice of war has placed at the disposal of mankind means of destruction hitherto unknown, against which there can be no adequate military defence, and in the employment of which no single nation can in fact have a monopoly.

2. We desire to emphasize that the responsibility for devising means to ensure that the new discoveries shall be used for the benefit of mankind, instead of as a means of destruction, rests not on our nations alone, but upon the whole civilized world. Nevertheless, the progress that we have made in the development and use of atomic energy demands that we take an initiative in the matter, and we have accordingly met together to consider the possibility of international action:-

- (a) To prevent the use of atomic energy for destructive purposes

- (b) To promote the use of recent and future advances in scientific knowledge, particularly in the utilization of atomic energy, for peaceful and humanitarian ends.

3. We are aware that the only complete protection for the civilized world from the destructive use of scientific knowledge lies in the prevention of war. No system of safeguards that can be devised will of itself provide an effective guarantee against production of atomic weapons by a nation bent on aggression. Nor can we ignore the possibility of the development of other weapons, or of new methods of warfare, which may constitute as great a threat to civilization as the military use of atomic energy.

4. Representing as we do, the three countries which possess the knowledge essential to the use of atomic energy, we declare at the outset our willingness, as a first contribution, to proceed with the exchange of fundamental scientific literature for peaceful ends with any nation that will fully reciprocate.

5. We believe that the fruits of scientific research should be made available to all nations, and that freedom of investigation and free interchange of ideas are essential to the progress of knowledge. In pursuance of this policy, the basic scientific information essential to the development of atomic energy for peaceful purposes has already been made available to the world. It is our intention that all further information of this character that may become available from time to time shall be similarly

treated. We trust that other nations will adopt the same policy, thereby creating an atmosphere of reciprocal confidence in which political agreement and cooperation will flourish.

6. We have considered the question of the disclosure of detailed information concerning the practical industrial application of atomic energy. The military exploitation of atomic energy depends, in large part, upon the same methods and processes as would be required for industrial uses.

We are not convinced that the spreading of the specialized information regarding the practical application of atomic energy, before it is possible to devise effective, reciprocal, and enforceable safeguards acceptable to all nations, would contribute to a constructive solution of the problem of the atomic bomb. On the contrary we think it might have the opposite effect. We are, however, prepared to share, on a reciprocal basis with others of the United Nations, detailed information concerning the practical industrial application of atomic energy just as soon as effective enforceable safeguards against its use for destructive purposes can be devised.

7. In order to attain the most effective means of entirely eliminating the use of atomic energy for destructive purposes and promoting its widest use for industrial and humanitarian purposes, we are of the opinion that at the earliest practicable date a Commission should be set up under the United Nations Organization to prepare recommendations for submission to the Organization.

The Commission should be instructed to proceed with the utmost dispatch and should be authorized to submit recommendations from time to time dealing with separate phases of its work.

In particular the Commission should make specific proposals:

- (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,
- (d) For effective safeguards by way of inspection and other means to protect complying states against the hazards of violations and evasions.

8. The work of the Commission should 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. Specifically it is considered that the Commission might well devote its attention first to the wide exchange of scientists and scientific information, and as a second stage to the development of full knowledge concerning natural resources of raw materials.

9. Faced with the terrible realities of the application of science to destruction, every nation will realize more urgently than before the overwhelming need to maintain the rule of law



among nations and to banish the scourge of war from the earth. This can only be brought about by giving wholehearted support to the United Nations Organization, and by consolidating and extending its authority, thus creating conditions of mutual trust in which all peoples will be free to devote themselves to the arts of peace. It is our firm resolve to work without reservation to achieve these ends.

The City of Washington

THE WHITE HOUSE

November 15, 1945

HARRY S. TRUMAN  
President of the United States

C.R. ATTLEE  
Prime Minister of the United Kingdom

W.L. MACKENZIE KING  
Prime Minister of Canada

## APPENDIX-D

The Soviet-Anglo-American Communique, December  
27, 1945 (Excerpts)<sup>1</sup>

The Foreign Ministers of the Union of Soviet Socialist Republics, the United Kingdom, and the United States of America met in Moscow from December 16 to December 26, 1945, in accordance with the decision of the Crimea Conference, confirmed at the Berlin Conference, that there should be periodic consultation between them. At the meeting of the three Foreign Ministers, discussions took place on an informal and exploratory basis and agreement was reached on the following questions:

JAMES F. BYRNES  
ERNEST BEVIN  
V. MOLOTOV

Dec. 27/45

REPORT OF THE MEETING OF THE MINISTERS OF FOREIGN  
AFFAIRS OF THE UNION OF SOVIET SOCIALIST REPUB-  
LICS, THE UNITED STATES OF AMERICA, THE  
UNITED KINGDOM

At the meeting which took place in Moscow from December 16 to December 26, 1945 of the Ministers of Foreign Affairs of the Union of Soviet Socialist Republics, the United States of America and the United Kingdom, agreement was reached on the following questions:

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1. Released simultaneously in Moscow, London, and Washington.

## VII

## The Establishment by the United Nations of a Commission for the Control of Atomic Energy

Discussion of the subject of atomic energy related to the question of the establishment of a commission by the General Assembly of the United Nations. The Ministers of Foreign Affairs of the Union of Soviet Socialist Republics, the United States of America, and the United Kingdom have agreed to recommend for the consideration of the General Assembly of the United Nations, the establishment by the United Nations of a commission to consider problems arising from the discovery of atomic energy and related matters. They have agreed to invite the other permanent members of the Security Council, France and China, together with Canada, to join with them in assuming the initiative in sponsoring the following resolution at the first session of the General Assembly of the United Nations in January 1946:-

Resolved by the General Assembly of the United Nations to establish a Commission, with the composition and competence set out hereunder, to deal with the problems raised by the discovery of atomic energy and other related matters.

## I. Establishment of the Commission

A Commission is hereby established by the General Assembly with the terms of reference set out under Section V below.

## II. Relations of the Commission with the Organs of the United Nations

(a) The Commission shall submit its reports and recommendations to the Security Council, and such reports and recommendations

shall be made public unless the Security Council, in the interests of peace and security, otherwise directs. In the appropriate cases the Security Council should transmit these Reports to the General Assembly and the members of the United Nations, as well as to the Economic and Social Council and other Organs within the framework of the United Nations.

(b) In view of the Security Council's primary responsibility under the Charter of the United Nations for the maintenance of international peace and security, the Security Council shall issue directions to the Commission in matters affecting security. On these matters the Commission shall be accountable for its work to the Security Council.

### III. Composition of the Commission

The Commission shall be composed of one representative from each of those states represented on the Security Council, and Canada when that state is not a member of the Security Council. Each representative on the Commission may have such assistants as he may desire.

### IV. Rules of Procedure

The Commission shall have whatever staff it may deem necessary, and shall make recommendations for its rules of procedure to the Security Council, which shall approve them as a procedural matter.

### V. Terms of Reference of the Commission

The Commission shall proceed with the utmost dispatch and inquire into all phases of the problem, and make such recommenda-

tions from time to time with respect to them as it finds possible. In particular the Commission shall make specific proposals:

- (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;
- (d) For effective safeguards by way of inspection and other means to protect complying states against the hazards of violations and evasions.

The work of the Commission should proceed by separate stages, the successful completion of each of which will develop the necessary confidence of the world before the next stage is undertaken.

The Commission shall not infringe upon the responsibilities of any Organ of the United Nations, but should present recommendations for the consideration of those Organs in the performance of their tasks under the terms of the United Nations Charter.

JAMES F. BYRNES

ERNEST BEVIN

V. MOLOTOV

Dec. 27-/45

## APPENDIX-E

A RESOLUTION OF THE GENERAL ASSEMBLY OF THE UNITED  
NATIONS ESTABLISHING A COMMISSION ON ATOMIC  
ENERGY, LONDON, JANUARY 24, 1946

Resolved by the General Assembly of the United Nations to establish a Commission, with the composition and competence set out hereunder, to deal with the problems raised by the discovery of atomic energy and other related matters:

1. Establishment of the Commission

A Commission is hereby established by the General Assembly with the terms of reference set out under section 5 below.

2. Relations of the Commission with the organs of the United Nations

(a) The Commission shall submit its reports and recommendations to the Security Council, and such reports and recommendations shall be made public unless the Security Council, in the interest of peace and security, otherwise directs. In the appropriate cases the Security Council should transmit these reports to the General Assembly and the members of the United Nations, as well as to the Economic and Social Council and other organs within the framework of the United Nations.

(b) In view of the Security Council's primary responsibility under the Charter of the United Nations for the maintenance of international peace and security, the Security Council shall issue directions to the Commission in matters affecting security.

On these matters the Commission shall be accountable for its work to the Security Council.

### 3. Composition of the Commission

The Commission shall be composed of one representative from each of those States represented on the Security Council, and Canada when that State is not a member of the Security Council. Each representative on the Commission may have such assistance as he may desire.

### 4. Rules of procedure

The Commission shall have whatever staff it may deem necessary, and shall make recommendations for its rules of procedure to the Security Council, which shall approve them as a procedural matter.

### 5. Terms of reference of the Commission

The Commission shall proceed with the utmost despatch and enquire into all phases of the problem, and make such recommendations from time to time with respect to them as it finds possible. In particular, the Commission shall make specific proposals:

- (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;

- (d) for effective safeguards by way of inspection and other means to protect complying States against the hazards of violations and evasions.

The work of the Commission should proceed by separate stages, the successful completion of each of which will develop the necessary confidence of the world before the next stage is undertaken.

The Commission shall not infringe upon the responsibilities of any organ of the United Nations, but should present recommendations for the consideration of those organs in the performance of their tasks under the terms of the United Nations Charter.



## APPENDIX-F

PRINCIPLES GOVERNING THE GENERAL REGULATION AND  
REDUCTION OF ARMAMENTS: A RESOLUTION OF THE  
UNITED NATIONS GENERAL ASSEMBLY, DECEMBER 14, 1946<sup>1</sup>

1. In pursuance of Article 11 of the Charter and with a view to strengthening international peace and security in conformity with the Purposes and Principles of the United Nations,

The General Assembly,

Recognizes the necessity of an early general regulation and reduction of armaments and armed forces.

2. Accordingly,

The General Assembly,

Recommends that the Security Council give prompt consideration to formulating the practical measures, according to their priority, which are essential to provide for the general regulation and reduction of armaments and armed forces and to assure that such regulation and reduction of armaments and armed forces will be generally observed by all participants and not unilaterally by only some of the participants. The plans formulated by the Security Council shall be submitted by the Secretary-General to the

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1. A/267, Dec. 13, 1946.

Members of the United Nations for consideration at a special session of the General Assembly. The treaties or conventions approved by the General Assembly shall be submitted to the signatory States for ratification in accordance with Article 26 of the Charter.

3. As an essential step towards the urgent objective of prohibiting and eliminating from national armaments atomic and all other major weapons adaptable now and in the future to mass destruction, and the early establishment of international control of atomic energy and other modern scientific discoveries and technical developments to ensure their use only for peaceful purposes.

The General Assembly,

Urges the expeditions fulfilment by the Atomic Energy Commission of its terms of reference as set forth in section 5 of the General Assembly resolution of 24 January 1946.

4. In order to ensure that the general prohibition, regulation and reduction of armaments are directed towards the major weapons of modern warfare and not merely towards the minor weapons.

The General Assembly,

Recommends that the Security Council expedite consideration of the reports which the Atomic Energy Commission will make to the Security Council and that it facilitate the work of that Commission, and also that the Security Council expedite considera-

tion of a draft convention or conventions for the creation of an international system of control and inspection, these conventions to include the prohibition of atomic and all other major weapons adaptable now and in the future to mass destruction and the control of atomic energy to the extent necessary to ensure its use only for peaceful purposes.

5. The General Assembly,

Further recognizes that essential to the general regulation and reduction of armaments and armed forces is the provision of practical and effective safeguards by way of inspection and other means to protect complying States against the hazards of violations and evasions.

Accordingly,

The General Assembly,

Recommends to the Security Council that it give prompt consideration to the working out of proposals to provide such practical and effective safeguards in connexion with the control of atomic energy and the general regulation and reduction of armaments.

6. To ensure the adoption of measures for the early general regulation and reduction of armaments and armed forces, for the prohibition of the use of atomic energy for military purposes and the elimination from national armaments of atomic and all other major weapons adaptable now or in the future to mass

destruction, and for the control of atomic energy to the extent necessary to ensure its use only for peaceful purposes.

There shall be established,  
within the framework of the Security Council, which bears the primary responsibility for the maintenance of international peace and security, an international system, as mentioned in paragraph 4, operating through special organs, which organs shall derive their powers and status from the convention or conventions under which they are established.

7. The General Assembly, regarding the problem of security as closely connected with that of disarmament,

Recommends the Security Council to accelerate as much as possible the placing at its disposal of the armed forces mentioned in Article 43 of the Charter;

It recommends the members to undertake the progressive and balanced withdrawal, taking account of the needs of occupation, of their armed forces stationed in ex-enemy territories, and the withdrawal without delay of their armed forces stationed in the territories of Members without their consent freely and publicly expressed in treaties or agreements consistent with the Charter and not contradicting international agreements;

Further recommends a corresponding reduction of national armed forces, and a general progressive and balanced reduction of national armed forces.

8. Nothing herein contained shall alter or limit the resolution of the General Assembly passed on 24 January 1946, creating the Atomic Energy Commission.

9. The General Assembly,

Calls upon all members of the United Nations to render every possible assistance to the Security Council and the Atomic Energy Commission in order to promote the establishment and maintenance of international peace and collective security with the least diversion for armaments of the world's human and economic resources.

## APPENDIX-G

SUMMARY OF THE FIRST REPORT OF THE ATOMIC  
ENERGY COMMISSION TO THE SECURITY COUNCIL\*

The Report enumerates five types of safeguards and specifies their characteristics: (1) Accounting for materials. (2) Inspection. (3) Supervision. (4) Management. (5) Licensing. Because of the dispute about inspection and management and the Commission's belief that inspection is inadequate, the definitions will be reproduced in full:

"Inspection means close and careful independent scrutiny of operations or violations of prescribed methods of operation. In addition to direct auditing measures.... inspecting may include observation of points of ingress to and egress from an establishment or installation to ensure that materials 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 to facilitate inspection.

"Management means direct power and authority over day-to-day decisions governing the operations themselves, as well as advisory responsibility for planning. Managerial control means internal control of a plant by a director or manager. Management by the international control agency means that the management is established by and responsible to such an agency. Management is normally a prerogative of ownership, but need not imply ownership."

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\* Reproduced from Edward A Shils, The Atomic Bomb in World Politics (London, nd), pp.38-42.

Safeguards against clandestine mining operations and against diversion of uranium and thorium at mineheads are concluded to be not too difficult for a combination of guards and inspectors. It could be done without interfering seriously with normal mining operations. The inspectorate must have complete access to all equipment and all phases of operations, and independent facilities for independent weighing, assay, and analysis. Particular attention should be paid to the establishment of safeguards wherever concentrated nuclear fuel is produced, since it can be used immediately for bombs. Declared refineries, chemical and metallurgical plants must be open to unrestricted inspection of the same scope required for mining.

Due to the fact that isotope separation plants can produce U235 in a degree of concentration fit for direct use in atomic bombs, the diversion danger is most acute at this stage. In view of the unreliability of methods of obtaining determinate ratios of uranium isotopes in separation plants, the Report recommends that "there must be internal control of such plants by a director or manager, and the management must be established by and responsible to the international control agency". Even if the "material balance" could be greatly improved, "the inherent dangers of the operation would still require management by the international control agency". This is equally true of the production of uranium and the chemical extraction plants, and in some cases the reactors (piles) must therefore also be operated by the international control agency.

The degree of danger involved in a reactor (pile) depends on its size, design, content, and rate of production of nuclear fuel. The international control agency should supervise the design of the reactors and their associated chemical extraction plants to the extent necessary to make diversion difficult. After their original construction the reactors must be kept under supervision to ensure that there is no diversion and that no rebuilding takes place which might convert them to other uses.

Periodic inspection and licensing are viewed as adequate for small research piles and their associated chemical extraction plants, unless the total content of nuclear fuel or potential of output of all the research piles in a given area is of military significance. Hence, since "chemical plants associated with reactors" are for the extraction of the fissionable and radioactive materials produced in the reactors, then even relatively small amounts of diverted products from these plants could be used for the immediate manufacture of atomic weapons. For this reason "adequate safeguards for chemical extraction plants associated with all except small research reactors are only possible through management by the international control agency". The control agency must have "broad privileges of movement and inspection, including rights to conduct surveys by ground and air. These privileges should, however, be very carefully defined to ensure against misuse." Aerial survey should be routine over areas where uranium and thorium are likely to be found.



It is impossible and undesirable to attempt routine inspection of the total industrial operation of a nation in order to detect clandestine activities in the atomic-energy sphere. This obstacle can be overcome by stringent safeguards against clandestine mining and milling, together with strict control to prevent diversion from authorized activities at all stages. Governments will be required to report on relevant matters to the international control agency, which should coordinate all relevant information to determine what areas may be suspected of containing clandestine activities. Where clandestine activities are reasonably suspected, the international control agency should have the right to direct access and inspection.

"Detection of clandestine refineries and chemical and metallurgical plants is more difficult than detection of clandestine operations at other stages in the processing of nuclear fuel."

"Isotope separation plants, reactors and chemical extraction plants, as well as mines, have distinguishing features which would facilitate the detection of clandestine activities at these stages." It might, however, be possible to break up these larger installations into numerous units sufficiently small as to make detection difficult. This of necessity places a greater burden on accurate control at the earliest stages. As long as they remain large, aerial survey can detect them. If they are broken up as a means of escaping aerial detection, they also become so numerous that the probability of their disclosure is increased.

"The detection of clandestine bomb manufacture as such is almost impossible. The plants are relatively small and they

have no easily distinguishable features." As long as bomb design requires an unusual quality and variety of research personnel, the activities of such personnel might indicate where clandestine production of bombs is going on. But when the design of bombs is developed, need for scientific personnel is reduced, and their whereabouts is less indicative of the propriety or impropriety of their activities. Furthermore, only a short time is required to produce bombs if the necessary fissionable material is available. "It is therefore vital that any unauthorised accumulation of essential nuclear fuels (by diversion at earlier stages) be prevented."

The international control agency should have the power of material accounting at each individual step and between points of shipment and receipt as means of detecting possible diversions in transit.

The international control agency should control storage and shipment of uranium and thorium to the degree necessary for security. The strictest possible safeguards against diversion of highly enriched or pure nuclear fuel during processing, storage, and shipment must be established by the international control agency. The agency "should itself store and itself handle all... pure nuclear fuel in transit. (This does not necessarily imply ownership of either the materials or of transit or storage facilities, these questions not yet having been discussed.)"

In view of the danger of seizure, stocks of concentrated or pure nuclear fuel in storage or in transit should be kept at

a minimum, but this should not be allowed to interfere unduly with the development or effectiveness of peaceful activities.

To reduce further the dangers which might arise from seizure, "a wide geographical distribution of stocks and plants and the restriction of stocks to minimum operating levels" is desirable. The seizure of mines or of ore stockpiles or some other product or installation relevant to an early stage of the process would be advantageous to those desiring to make weapons only if they already have the separation plants and reactors for making nuclear fuel at their disposal.

The First Report also embodied the views on the veto power which had first been put forward by the Americans. It recommended that there should be a single treaty to cover all phases and stages of the realisation of the control scheme. The treaty was to "provide that the rule of unanimity of the permanent members which in certain circumstances exists in the Security Council shall have no relation to the work of the international control agency. No government shall possess any right of 'veto' over the fulfilment by the international control agency of the obligations imposed upon it by the treaty, nor shall any government have the power for the exercise of any right of 'veto' or otherwise to obstruct the course of control of inspection." The treaty should specify the violations, the means of determining them and the measures of enforcement against persons and nations which commit violations. "The judicial or other processes for determining violations of the treaty.... and of punishments therefore should be

swift and certain.... There shall be no legal right, by 'veto' or otherwise, whereby a wilful violation... shall be protected" from the consequences of the violation of the terms of the treaty.

The treaty is also to prohibit "the manufacture, possession, and use of atomic weapons by all participating or by persons under their jurisdiction". Existing stocks of atomic weapons are to be disposed of.

## APPENDIX-H

SUMMARY OF THE SECOND REPORT OF THE ATOMIC  
ENERGY COMMISSION TO THE SECURITY COUNCIL\*

The Second Report was to a great extent an elaboration of the First Report. Certain topics not dealt with previously or only alluded to in passing were dealt with more fully, especially the complex problem of production quotas regulating the rate of mining and production in different areas of the world. All were more sharply defined, and the one on which the majority view and the Soviet view were closest together — namely, inspection — was considerably clarified and limited in the hope of further agreement.

In order to allay Soviet anxieties about a hostile majority in the governing board of an International Control Agency, the Second Report assigned as many decisions as possible to the Treaty or Convention itself. It did not leave them to the International Control Agency, on which the Soviet would be easily outvoted, but by placing them in the Treaty or Convention gave the Soviet Union the veto power over them at the moment of establishment.

The determination of overall production rates came more fully to the centre of attention. If in the mining sphere "the right to decide upon the rate of extraction were

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\* Reproduced from Edward A. Shils, The Atomic Bomb in World Politics (London, n.d.), pp.49-53.

left in the hands of individual nations, there would be a risk that one country might retain reserves of ore in its soil or might deliberately accumulate stockpiles, to the disadvantage of others". Likewise "a lack of balance in the location of ... facilities (for processing and utilising nuclear fuel) would affect general security by introducing a corresponding lack of balance in military potentials". In addition, in view of the danger of seizure and so as to decrease the incentives of any state to obtain a military advantage by such seizure, it was regarded as necessary that a certain pattern of distribution of stockpiles and facilities be agreed on. The international agency is to assign quotas for the production of source material to states in which deposits or dumps are located. The principles for the determination of these quotas are to be specified in the international treaty or convention, so that comparable national deposits throughout the world shall be depleted proportionately. Each nation's ratio and the amount to be mined and its total reserves shall be determined by the ratio of estimated annual world needs to estimated world supply. Owners, private and public, of source material mines are to be compensated by the international agency for any losses suffered as a result of changes in operating policy.

The Commission reaffirmed even more emphatically than in the First Report that unless there were certainty that "the international agency had knowledge of the disposition of all raw material ... no control system could inspire the

confidence between nations that is required". The agency must therefore have powers of routine inspection in specified and declared areas which are known to contain source materials. The agency is also to have the right to conduct surveys and explorations to discover and determine world supplies of source materials in areas where, in the judgment of the agency, source materials might be contained. These latter areas might be called to the attention of the agency by the states in which they are located, but they may also have been learned of from other sources. "These areas in the aggregate may amount to a substantial portion of the territory of particular nations. They may include private as well as public lands. Military or other restricted areas, moreover, would not be exempt." Whereas routine surveys and explorations need not require warrants or special authorisation for their execution, they would be required for inspection in those areas which are not open to the local population.

Concerning the detection and prevention of clandestine mining activities, the Second Report goes into far greater detail than the First Report, and the results show the care taken by the delegates to reduce the irritations and suspicions to which such inspection might give rise, while still trying to keep them effective. By this time the Commission was well aware of the political hornets' nest which would be raised by inspection. Inspection for suspected clandestine activities "will have to question the good faith of governments, since it is unlikely that private individuals ... could conduct

clandestine activities on a scale of military significance, and since it is even more unlikely that it could do so without the knowledge of the government in the particular territory". The Report stresses that there is to be no right of secret entry into national territories. Inspections would be made only after due notice and would be attended by national liaison officers. The Report acknowledges that the requirements of a warrant might unduly delay or impede the agency, but this will have to be borne in view of (1) the unwillingness of nations to permit routine inspection of non-atomic military and other restricted facilities, and (2) the rights of private citizens. The warrants should be obtainable from an international court as well as from domestic sources. The former must be independent of the control agency.

Because routine inspections of declared activities would not be comprehensive enough and special searches based on vague suspicions might lead to friction between states and the international agency, there should also be provision for routine searches for clandestine activities carried on without specific allegation of suspicion. Hence the agency should have the duty and right of making spot aerial surveys over every participating nation, limited to a comparatively small area to be chosen by the agency and carried out periodically (e.g. every two years). "Such surveys besides providing a deterrent against clandestine activities would serve to dispel suspicions among nations that clandestine activities exist and remain undetected." The area to be covered in spot aerial surveys shall in each period of two years not exceed five per



cent of the territory under the control of each nation or an area not to exceed 2,000 square miles, whichever is larger. (Routine aerial surveys shall be required over areas declared to contain source materials — these are not included in the 2,000 square miles or five per cent.)

This brief summary of only a few of the main points of the sections on Inspections and Mining will indicate how much more differentiated the Second Report is than its predecessor. It will also indicate what pains the Commission took to protect the sensitivities of states by guaranteeing freedom from arbitrary prying and interference in areas not relevant to uranium and thorium mining.

The fundamentals have, however, remained the same as in the First Report. The international agency is to own all nuclear fuel. It is to have the monopoly of ownership, operation, and management of dangerous installations producing nuclear fuel, dangerous facilities capable of utilising nuclear fuel for the production of power or radioactive isotopes and for handling or processing nuclear fuel. Continuous research will be required to make more precise the measures of output of nuclear fuel. To reduce the dangers of seizure, stockpiles of nuclear fuel suitable for conversion to atomic bombs will be kept at the minimum compatible with operating efficiency.

Nuclear fuel may be leased for non-dangerous activities provided that it will be used in licensed facilities of

an approved design; and provided also that unrestricted inspection and continuous guarding are allowed.

As in the First Report, transportation of nuclear fuel is to be done only under the authority of the international agency, which shall be authorised to have its own vehicles, under its own armed guards, etc. The production facilities and stockpiles of nuclear fuel shall be distributed in accordance with quotas and principles set forth in the treaty or convention governing the geographical location of dangerous activities and stockpiling. The location within the boundaries of a given state will be subject to the decision of the international agency only where the location affects international security in ways which may be specified in the treaty or convention.

The inspection rights with respect to reactors, separation and processing plants, etc., are formulated much as in the case of mining. Searches for clandestine operations and periodic aerial surveys every two years over comparatively small areas selected by the agency are provided for. Beyond this, suspicions may lead to searches only upon the grant of authorisations or warrants to be issued by domestic courts or by an international court independent of the International Control Authority.

In the field of research, the Second Report provides for the monopoly by the international agency of all research involving nuclear fuels or radioactive isotopes in any quantity or quality which the agency regards as dangerous. The

agency, as in the previous report, and against Soviet wishes, is to have the right exclusively to conduct research on and development of atomic weapons. The agency is to take over any experimental development work on the use of nuclear fuel for power production when the quantities involved become "dangerously" large. It will also have the responsibility of promoting research by private persons and states by opening its laboratories to those non-agency scientists, and by making materials and funds available to such non-agency scientists in aid of research. Research with non-dangerous quantities is to be left entirely free, and there is to be no secrecy concerning scientific or technical information on atomic energy.

The Report leaves undiscussed the following important problems: The organisation and administration of the authority; the geographical location of dangerous activities and stockpiling, financial and budgetary organisation; prohibitions and enforcement; and the stages of transition from the present situation to a system of international control. These were not touched on, because it was thought that they could be treated effectively only in the framework of conclusions regarding the functions and powers of the international agency.

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