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United States Atomic Energy Commission  
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THE ATOM AND PEACE

May I express my special affection for the organization that has brought me once again among friends in whose good company I have spent much of my life.

It was just about six years ago that the World Affairs Council first took firm root in our community. The occasion was a luncheon for the United States Ambassador to the United Nations, Mr. Cabot Lodge.

Then, as now, an atmosphere of crisis pervaded East-West relationships. It was the idea of several public spirited men, among them Norman Chandler, Asa Call, Preston Hotchkis, and Paul Hoffman, that our community should have its own forum for discussing foreign affairs.

The Los Angeles World Affairs Council was formed along with my friends and neighbors, I welcomed the idea with enthusiasm and worked to bring the Council into being, and took part in its activities until summoned back to Washington.



That experience was a pleasure and a privilege. The Council has become one of the most important discussion groups of its kind in the nation, and I share your pride in its service to this community and to our country.

My topic this afternoon concerns the atom as a factor in American security and in the prospects for peace. I would much prefer to talk about the inspiring progress both in the United States and around the world being made in development of the peaceful uses of the atom.

The realization of the vast potential of nuclear energy to serve us all depends in large measure, however, on the current efforts at Geneva to achieve a dependable system for control of its military application. Therefore, it is to disarmament and nuclear weapons test suspension that I will address my remarks.

For many years the atom in its various manifestations, political, military, social, technological, has been one of my principal concerns in government. During the past two years, I have devoted all of my time to this subject.

When I became Chairman of the Atomic Energy Commission, I knew that I was being drawn into a highly specialized field, and one that was also fairly controversial. The scientific community long had been split on the question of the wisdom of a national policy that looked to the atom to provide the central element of military power.



Elsewhere, there was a sharp difference of opinion as to whether enough was being done to hasten the atom's utilization as a prime source of nuclear power.

These controversies strikingly demonstrate the rising influence of the atom and in both our domestic and foreign policies. This is so because nuclear energy, in its paradoxical capabilities, offers mankind the alternative of immense enrichment or unparalleled destruction.

Whether we have the good without the ill is a choice which our imperfect world has yet to make. Accordingly, the management of this new resource has become one of the foremost concerns of our Government.

The danger is that this technology, with its awesome power, will be misused with catastrophic consequences. The problem is how to establish arrangements that will make such misuse an impossibility.

Nuclear weapons technology, once a monopoly in the United States, now is possessed by three other powers. There is reason to believe that the production of weapons grade uranium and plutonium, the main materials for nuclear weapons can be produced by still other nations without excessive difficulty. So the choice of whether this new resource is to be used for good or misused for man's devastation no longer rests with us alone.



It appears that the world has two choices. Either learn to live with the ever-increasing destructive power of the atom, or find a solution to the perplexing problems of control, and by so doing, remove this danger.

The latter purpose is the objective of the United States in negotiations now going on in Geneva.

There the atom, in all of its dangerous implications, is at the center of two quite different but closely interrelated diplomatic activities.

In one, the United States and Britain are negotiating a treaty with the Soviet Union to put a stop to testing of nuclear weapons under arrangements of verification that will insure compliance.

In the other discussion, recently commenced, the United States and other countries of the West are negotiating with the Soviet Union and several of its satellites on the terms of a possible general disarmament plan. This plan to be meaningful, would have to include first: control and reductions -- then, elimination of both conventional and nuclear armaments and finally weapons delivery systems.

The ends we seek are plain. In test ban talks our aim is to bring nuclear weapons development to a reliable standstill by halting testing under arrangements of inspection and control. We seek and insist upon safeguards that will foreclose beyond



reasonable doubt the possibility of one party continuing weapons development in secrecy and thus gaining an important military advantage.

The central issue is control. If we and the British and the Soviets can agree on a worldwide system of inspection that will assure that testing has been halted important progress will have been made in relieving the world of its fears.

Suspension of testing is not in itself disarmament, however, it offers some important assurances. It means that new different, and, perhaps, more lethal weapons will not evolve. Also, it means that nations who have not as yet developed a nuclear capability will have increasing difficulty perfecting their processes and amassing a dependable armory of nuclear weapons.

The current talks on tests suspension were initiated in 1958 by the United States. Because all past negotiations in this area, being of a political nature, had failed we urged that this meeting be approached from a scientific standpoint. We argued that if scientists could agree on how to go about this task of designing satisfactory control arrangements the diplomats could find the necessary words to bind the desired arrangement into a treaty.

The United States evidenced its good intentions by voluntarily giving up nuclear testing during the period of



these negotiations. We suggested the British and Soviets do likewise for one year beginning October 31, 1956. This we did in high hopes of reaching an agreement in a reasonable time.

Seventeen months have passed, nearly two hundred meetings held; and we still seem far apart on many of the essential features of a control system. Progress has been made, to be sure, in many areas; but these do not go to the heart of the problem. The safeguards we seek, and must have, hinge on the important issues yet to be resolved. We must explore every possible avenue open to accomplish this.

During this long interval the United States has adhered faithfully to its "no test pledge." The British have done likewise. We are told, but have no way of verifying, that the Soviets have also stopped their tests.

For the purpose of this analysis we can lay aside the question of testing in the atmosphere and under water, for here nuclear explosions yield radioactivity which is carried away and can be picked up by sensitive instruments which tell us what has gone on. The high altitude problem awaits another day because of technical problems yet to be solved and economic costs.

Testing underground is a different problem. It is relatively easy, produces the desired scientific data, and if properly done releases no radioactivity into the



atmosphere. Hence, the public fear of fallout, a serious concern of the United States Government is not an issue. The question is raised as to the value of underground tests. It is a new technique and not widely understood, however, I can say with assurance that weapons, large and small, can be developed and improved by testing in this medium. It follows, therefore, that any decision to suspend nuclear testing must be accompanied by a control arrangement which will assure us that this type of testing has been stopped by all parties.

The technical problem is complicated by the necessity of distinguishing between the seismic signals given off by earthquakes and those given off by underground nuclear explosions.

This requires a network of seismic stations manned by international observers. Arrangements must provide for the dispatch of international control teams into any area from whence a suspicious signal has come and, thus, make what we call an on-site inspection for evidence of possible violation.

This requirement runs head-on with the Soviet obsession for secrecy. The Russians simply do not want people moving freely about their vast country. Yet this they must allow if the arrangements are to be considered dependable.



The problem of reaching an a agreement is not difficult in a country as open as ours. Where difficulties arise is where the preservation of secrecy is of over-riding importance to the country concerned.

The Soviet obsession for secrecy is, it seems to me, the basic issue. It has prolonged the test suspension negotiations. Now it is appearing also in the new disarmament conference. If the Soviets are willing to open their territory to reasonable inspection, then progress can be expected. If not, the difficulties are manifold.

In all of this, differences have arisen between scientists of the opposing sides. Long conferences have taken place and they have not been too harmonious. Some bitter words have been passed and at times the motives of our scientists have been impuned.

The American technical case, I assure you, is unimpeachable. It was developed by scientists of the highest competence. It is not necessary to delve into the complex technical details. What is important is to understand what our position is at Geneva.

No system yet devised and particularly the one formulated by the scientists at Geneva can detect all underground explosions and separate them from natural events. The larger the explosion the easier the problem. Even so, it is difficult to say with certainty that we can detect and identify underground shots equivalent to the power of 20,000 pounds of TNT.



This leaves a gap in the control network big enough for an underground warhead as powerful as the bomb that fell on Hiroshima to slip past undetected. Furthermore, if the simple precaution were taken to disguise an illegal explosion by a tremor suppressing technique known as "decoupling," a 100,000 ton test might escape identification all together.

This we have known and have demonstrated repeatedly to the Russian scientists. It seems to be their penchant for security <sup>secrecy</sup> to ignore these facts.

After the final effort to reach agreement among the scientists failed, for political rather than for scientific reasons, the President proposed that we agree on an area of suspension where control seemed possible if a few only a very few, on-site inspections were permitted. This is now referred to as the "threshold," - approach, - adopting the lower limit of the detection system capability. Simultaneously he proposed that the detection system be improved through research and experimentation performed by us alone or in cooperation with others, including the Soviets. This suggestion was part of the proposal because many of our seismologists feel that, with time, significant improvements will evolve.

This was the situation as it existed last Saturday. Then the Soviets came forward suddenly with their proposal



which appeared on the surface to accept our principle of appropriate controls.

When examined closely, however, the Soviets were doing quite the reverse. They were calling for a complete suspension of all tests for a period that could stretch to five years or possibly indefinitely. Furthermore, they insist that in the most critical area of tests, under the threshold of which I have spoken, we accept them on faith.

Thus, the United States and its allies, according to Soviet plan, would hold our nuclear experimentation idle for at least five years, or more, and during this long interval we would have no way of telling whether the Russians, let alone their Chinese partners, were observing a similar restraint.

The Soviet proposal has been widely healded as concession. It is not.

It concedes only what the American scientists have been insisting upon.

It concedes that we have been right in our position that there is a lower limit on the seismic capabilities of the detection system we have been talking about.

But their proposition failed to deal with this problem. Instead it sets forth in language designed to deceive the people of the world that a plan for adequate control finally was being offered by the Soviets.



Nothing could be further from the truth.

The philosophy behind the Soviets most recent proposal was accurately and clearly stated by Premier Khrushchev in his January 14, 1960, speech to the Presidium when he said and I quote: "Let us concede that sometimes it is not easy to distinguish underground explosions of nuclear weapons from earthquakes but an agreement must, of course, be honestly observed by all parties. Should any side violate it the instigators of such violations will cover themselves with shame and will be condemned by the peoples of the world."

I have quoted his words to show precisely what is being asked of the United States and our British partners. We are being importuned to accept the Soviet position on faith alone. Because of Soviet insistence on secrecy we are being asked to forego for an indefinite period the safeguards that President Eisenhower said are "indispensible prerequisites" to an agreement.

What the President seeks are new arrangements for safeguarding test suspension in all areas and for all time if such can be brought about.

If the Soviet proposal offers anything, it offers hope. However obscure, they are moving toward a more reasonable attitude. This we must study and explore.

I have been speaking principally of the problems of a test ban - perhaps at too great length but it is a subject close to me and vital to our national interests.



But, there now rises an even more important issue in the ten-power conference five from the West, five from the East. The question of disarmament is under active deliberation. Great claims have been made by Soviet spokesmen in recent months. Great hopes have been raised in the hearts of men throughout the world that perhaps the Russian intention is sincere. Perhaps he now wants to play his part in relieving fears that work continually on man's mind everywhere.

We and our Western partners have entered these negotiations with sincerity and determination. We hope, in spite of all past disappointments, that a way can be found for agreement on the essentials of a plan for arms control. If the dismal history of our past efforts is an indicator of future prospects for success, this hope may be optimistic. But we must be hopeful, for the prize of peace has never been greater than now when one considers the devastation of a nuclear war.

How can it be done? Can we ever arrange to secure disarmament with a country that places secrecy above all else? My answer is no. Definitely not, if this determined view continues. The hope rests in a change on their side. Are they now willing to drop the wall of secrecy, draw back the Iron Curtain, and present to the world a frankness in action commensurate with their word, so often and so recently



repeated. Practically, this means first, the "open skies", as proposed by President Eisenhower at the Summit in 1955 and urged upon the Soviet's deaf ears countless times since.

It means also the privilege of taking a look when doing so is warranted.

It means observing what goes on at airdromes, harbors, and at military bases.

It means a freedom to look around in their country just as they are free to look in ours.

This prompts the question, "Is it worth trying?" I think the answer must be "yes." We must try in every reasonable way to reach a safe agreement on disarmament. We should cease negotiations only if it becomes obvious that we cannot proceed further without endangering our vital national interests. To do less would be to fail our responsibilities to mankind.

As I left Washington a few hours ago, the latest Soviet proposal for a test moratorium was being examined thoroughly and thoughtfully at the highest level of government. Also the more recent and less publicized positions of the Soviet negotiations in the disarmament talks were being appraised.

We have to be prepared for bitter "haggling" and false propoganda. We cannot let ourselves be fooled nor run the risk of deceiving ourselves and the world that disarmament is a reality when it is not.



Also, as has happened in the past when the free world takes a resolute stand, a stand that is right, and a stand that is strong, and then says, "to this point and no further," the Soviet Union has often found that reasonableness is in its own best interests.

This is our hope as the talks at Geneva proceed.