

# Text of Statement and Comments by Strauss on Hydrogen Bomb Tests in the Pacific

WASHINGTON, March 31 (AP)—Following is the text of a statement and comments on the hydrogen bomb tests read at President Eisenhower's news conference today by Rear Admiral Lewis L. Strauss, Atomic Energy Commission chairman.

The President has authorized me to make available those portions of my report yesterday to him, the publication of which would not compromise information vital to our national security.

I have just returned from the Pacific proving grounds of the Atomic Energy Commission, where I witnessed the second part of a test series of thermonuclear weapons. I will describe it as well as I am able; but perhaps before doing so it would be appropriate to begin with a short summary of the general background.

We detected the test of an atomic weapon, or device, by the Russians in August of 1949. Realizing that our leadership was therefore challenged and that our sole possession of the weapon which had been a major deterrent to aggression had been canceled, it became clear that our superiority would therefore be only relative and dependent upon a quantitative lead—that is to say, upon possession of greater numbers of atomic weapons so long as that could be maintained.

There was, however, the alternative of a qualitative lead if we could make a weapon of greater force—greater than the fission weapons by a degree of magnitude comparable to the difference between fission bombs and conventional bombs. A technical method of accomplishing this was known to our scientists.

In January, 1950, the President directed the Atomic Energy Commission to undertake the necessary steps to see if we could, variously called the hydrogen bomb, the fusion bomb, and the thermonuclear bomb, could in fact be made. As you know, thanks to the ingenuity of those scientists and engineers who devoted themselves to the project, the feasibility of the fusion reaction was demonstrated and a prototype was tested at Eniwetok in November, 1952.

This test produced the largest man-made explosion ever witnessed to that date, and from that point we moved into refinement of design and other development.

In August of last year the test also tested a weapon well beyond the range of regular fission weapons and which derived a part of its force from the fusion of light elements. There is good reason to believe that they had begun work on this weapon substantially before we did.

The present series of tests has been long in the planning. It is conducted jointly by the Atomic Energy Commission and the Department of Defense. A task force composed of the three armed services and a scientific staff representing the commission was established last year in accordance with the procedure successfully followed in preceding tests outside our continental limits. The Navy, Air Force and Army have successively supplied the command for the task forces. Early this January, men and supplies began to move out to the proving grounds for this series. The first shot took place on its scheduled date of March 1, and the second on March 26. Both were successful.

No test is made without a definite purpose and a careful determination that it is directed toward an end result of major importance to our military strength and readiness. The results which the scientists at Los Alamos and Livermore had hoped to obtain from these two tests were fully realized, and enormous potential has been added to our military posture by what we have learned.

It should also be noted that the testing of weapons is important likewise in order to be fully aware of the possible, future, aggressive ability of an enemy for we now fully know that we possess no monopoly of capability in this awesome field.

Now as to this specific test series. The first shot has been variously described as "devastating," "out of control," and with other exaggerated and mistaken characterizations. I would not wish to minimize it. It was a very large blast but at no time was the testing out of control.

The misapprehension seems to have arisen due to two facts. First, that the yield was about double that of the calculated estimate—a margin of error not incompatible with a totally new weapon. (The range of guesses on the first A-bomb covered a relatively far wider spectrum.) Second, because of the results of the "fall-out."

When a large explosion occurs on or within a certain distance of the ground, an amount of earth or water or whatever is beneath the center of the explosion is sucked up into the air. The heavy particles fall out quickly. The lighter ones are borne away in the direction of the wind until they too settle out. If the explosion is a nuclear one, many of these particles are radioactive as are the vaporized parts of the weapon itself.

For this reason the Atomic Energy Commission has conducted the tests of its larger weapons away from the mainland so that the fall-out would occur in the ocean where it would be quickly dissipated both by dilution and by the rapid decay of most of the radioactivity, which is of short duration. The Marshall Islands were selected for the site of the first large-scale tests—Operation Crossroads—for reasons which will be apparent from the maps which I shall show you. The late Admiral W. F. Blandy, under whom I had the privilege of serving, selected the Bikini site.

**No Islands Destroyed**  
The Marshall Islands during the months of February, March and April are usually favored by winds which would blow away from any inhabited atolls. The two atolls of Bikini and Eniwetok were chosen as the base for these operations. Each of these atolls is a large necklace of coral reef surrounding a lagoon two to three hundreds of square miles in area, and at va-

rious points on the reef-like heads on a string appear a multitude of little islands, some a few score acres in extent—others no more than sandspits. It is these small, uninhabited, treeless sandbars which are used for the experiments.

As a matter of fact, the task force dredged up enough sand and coral to build one of these so-called islands to have it where it was wanted most advantageously for shot No. 1. The impression that an entire atoll or even large islands had been destroyed in these tests is erroneous. It would be more accurate to say a large sandspit or reef. Before the shot takes place, there is a careful survey of the winds at all elevations up to many thousands of feet. This survey is conducted by weather stations on islands and on fleet units at widely separated points.

Contrary to general belief, winds do not blow in only one direction at a given time and place. At various heights above the earth, winds are found to be blowing frequently in opposite directions and at greatly varying speeds. An atomic cloud is therefore sheared by these winds as it rises through them.

The meteorologists attempt to forecast the wind direction for the optimum condition and the task force commander thereupon decides on the basis of the weather reports when the test shall be made. The weather forecast is necessarily long-range because a warning area must be searched for shipping and the search which is carried out both visually and by radar in PV Navy planes requires a day or more to complete.

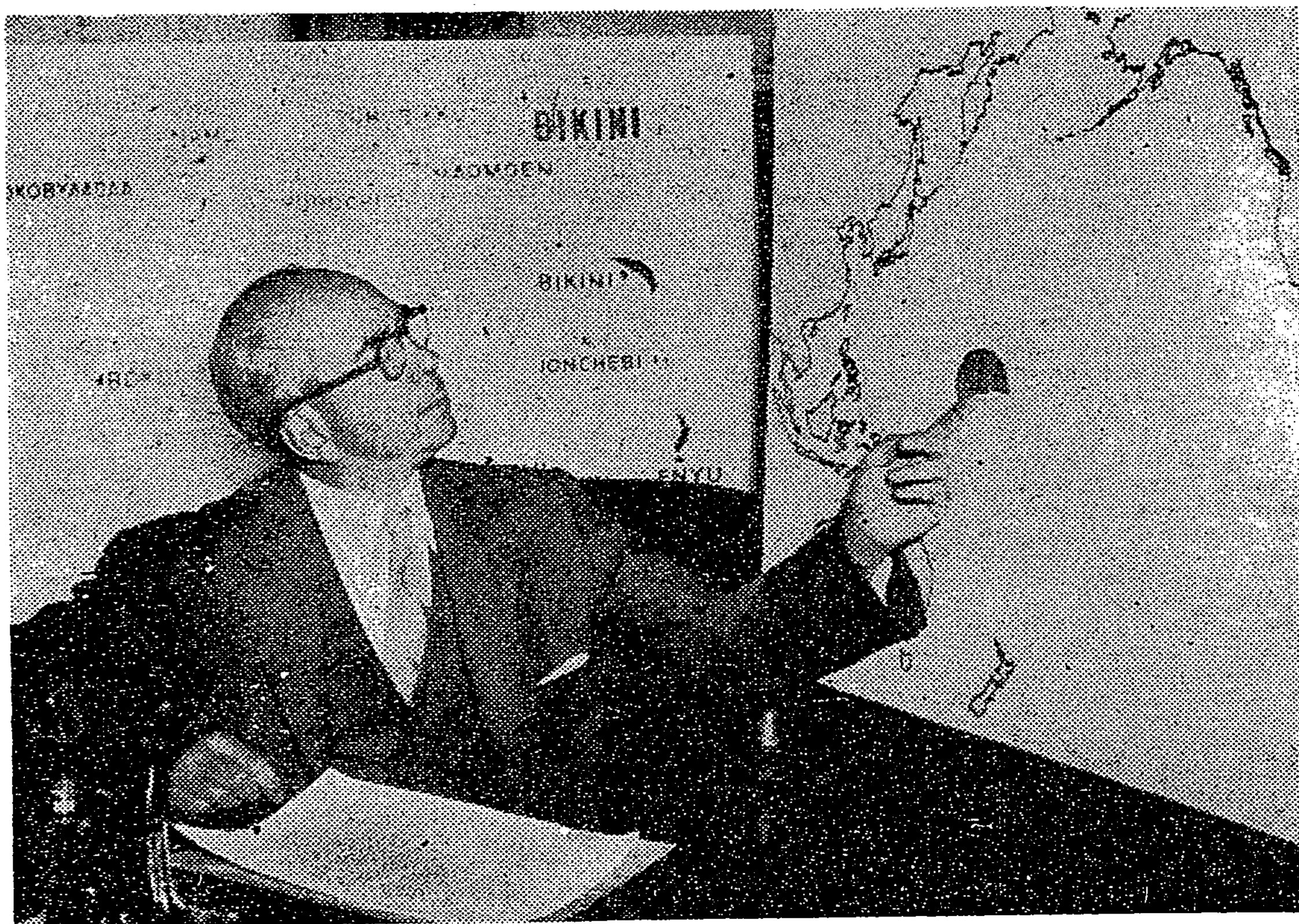
The "warning area" is an area surrounding the proving grounds within which it is determined that a hazard to shipping or aviation exists. We have established many such areas as have other Governments.

This map shows such areas off the Pacific Coast at Point Mugu, and off the Hawaiian Islands. Here is a large guided missile warning area from Florida across the Bahamas. Here is one maintained by Great Britain off Australia.

Including our continental warning areas, we have established a total of 447 such warning and/or danger areas. This particular warning area was first established in 1947. The United Nations were advised and appropriate notices were carried then and subsequently in marine and aviation navigational manuals.

Despite such notices there are many instances where accidents or near accidents have resulted from inadvertent trespass in such warning areas. The very size of them makes it impossible to fence or police them.

For the day of shot Number



SITE OF HYDROGEN TEST SHOWN: Rear Admiral Lewis L. Strauss, chairman of the Atomic Energy Commission, points to spot where tests were conducted in Marshall Islands.

1, the meteorologists had predicted a wind condition which should have carried the fall-out to the north of the group of small atolls lying to the east of Bikini. The survey aircraft carefully searched the area and reported no shipping. The shot was fired.

The wind failed to follow the predictions but shifted south of that line, and the little islands of Rongelap, Rongerik and Utrik were in the path of the fall-out. A Japanese fishing trawler, the Fortunate Dragon, appears to have been missed by the search but, based on a statement attributed to her skipper, to the effect that he saw the flash of the explosion and heard the concussion six minutes later, it must have been well within the danger area.

The twenty-three crew members on the ship, twenty-eight American personnel manning weather stations on the little islands, and the 236 natives on these islands were therefore well within the area of the fall-out. The supposition that the actual blast of the bomb extended over such enormous areas is, of course, entirely incorrect.

The task force commander

promptly evacuated all the people from these islands. They were taken to Kwajalein, where we maintained a naval establishment, and there placed under continuous and competent medical supervision. I visited them there last week.

Since that time it has been determined that our weather personnel could be returned to duty, but are still being kept on Kwajalein for the benefit of further observation. None of the twenty-eight weather personnel have burns. The 236 natives also appeared to me to be well and happy.

The exceptions were two sick cases among them, one an aged man in advanced stages of diabetes, the other a very old woman with crippling arthritis. Neither of these cases have any connection with the tests.

Today, a full month after the event, the medical staff on Kwajalein advised us that they anticipate no illness, barring of course disease which might be hereafter contracted. One child has been born in the group and others are expected.

[At this point Admiral Strauss interpolated the following in his prepared statement, which evoked questioning: They named the child, a little

girl, after my wife, and I thought she ought to be dowryed, and since they have no use for money, I gave her ten pigs.

[MERRIMAN SMITH of the United Press—What was the name of the child? A.—I think the family name is Majoro, but I am not certain as to that.

[GARNETT HORNBER of The Washington Evening Star—What was her first name?

[MRS. MAY CRAIG of Maine Newspapers—What is your wife's name? A.—Alice. That is not a part of this prepared statement. (Laughter.)

The situation with respect to the twenty-three Japanese fishermen is less certain due to the fact that our people have not yet been permitted by the Japanese authorities to make a proper clinical examination. It is interesting to note, however, that the reports which have recently come through to us indicate that the blood count of these men is comparable to that of our weather station personnel.

Skin lesions observed are thought to be due to the chemical activity of the converted material in the coral rather than to radioactivity, since these lesions are said to be already healing. The men are un-

der continual observation by Japanese physicians, and we are represented in Japan by Dr. Morton of the Atomic Bomb Casualty Commission and Mr. Eisenbud of the Atomic Energy Commission.

With respect to the stories concerning widespread contamination of tuna and other fish as the result of the tests, the facts do not confirm them. The only contaminated fish discovered were those in the open hold of the Japanese trawler.

**Fear Held Groundless**

Commissioner Crawford of the United States Food and Drug Administration has advised us: "Our inspectors found no instance of radioactivity in any shipments of fish from Pacific waters. Inspections were undertaken as a purely precautionary measure." There is no occasion here for public apprehension about this type of contamination.

I should perhaps note that in the waters around Bikini and Eniwetok at certain seasons of the year, almost all fish caught are normally poisonous as a result of feeding on certain seasonally prevalent microorganisms, and the natives and our task force personnel do not eat them at such times.

In the matter of indemnifying the Japanese, our Government has advised us: "Our inspectors found no instance of radioactivity in any shipments of fish from Pacific waters. Inspections were undertaken as a purely precautionary measure." There is no occasion here for public apprehension about this type of contamination.

With respect to the apprehension that fall-out radioactivity would move toward Japan on the Japanese Current, I can state that any radioactivity falling into the test area would be harmless within a few miles after being picked up by these currents which move slowly (less than one mile per hour) and would be completely undetectable within 500 miles or less.

With respect to a story which received some currency last week to the effect that there is danger of a fall-out of radioactive material in the United States, it should be noted that after every test we have had, and the Russian tests as well, there is a small increase in natural "background" radiation in some localities within the continental United States.

But, currently, it is less than that observed after some of the previous continental and overseas tests, and far below the levels which could be harmful in any way to human beings, animals, or crops. It will decrease rapidly after the tests until the radiation level has

returned approximately to the normal background.

A recent comment which I have been shown has suggested that the incident involving the fall-out on inhabited areas was actually a planned part of the operation. I do not wish to comment on this other than to characterize it as utterly false, irresponsible, and gravely unjust to the men engaged in this patriotic service.

Finally, I would say that one important result of these hydrogen bomb developments has been the enhancement of our military capability to the point where we should soon be more free to increase our emphasis on the peaceful uses of atomic power—at home and abroad. It will be a tremendous satisfaction to those who have participated in this program that it has hastened that day.

KENNETH M. SCHEIBEL of The Gannett Newspapers—Mr. Chairman, you said that this particular explosion was not out of control. But is it possible that in any series of tests that a hydrogen explosion or series of them could get out of control?

A.—I am informed by the scientists that that is impossible.

CHARLES S. VON FREEMD of The Columbia Broadcasting Company—Admiral Strauss, yesterday, at his news conference, Secretary of Defense Wilson said the results of the March 1 test—is the one he was referring to—was unbelievable. Would you care to comment on that?

A.—No, I don't think I should comment on that. The use of that adjective, I think, was played up beyond the point where the Secretary intended it. I don't know what is meant by "unbelievable" and I would rather not comment.

NAT S. FINNEY of The Buffalo Evening News—Mr. Chairman, do you intend to imply by the last paragraph in this statement that the work on the weapon phase of the atom is reaching a completion; that we are approaching a point where pursuit of this will no longer yield very large profits, and that we will, therefore, turn our research power to the peaceful applications?

A.—Mr. Finney, I think the answer to that is this: The military has certain requirements. The commission is engaged in attempting to fill those requirements. The ability of the commission to devote attention and fissionable material to peaceful requirements, peaceful needs, is always junior to the defense needs, by definition of the act itself.

The result of these tests has brought us very much nearer to the day of the satisfaction of military requirements, put us within sight of them, so that we can see the ability to pro-

ceed aggressively with the peacetime development of power to an extent that we were not able to before the tests.

RICHARD WILSON of The Cowles Publications—Admiral Strauss, can you go beyond this statement and describe the area of the blast, and the effectiveness of the blast, and give a general description of what actually happened when the H-bomb went off?

A.—The area of the blast, Mr. Wilson, would be about—THE PRESIDENT—Why not depend on those pictures they are all going to see?

I understand you are going to see a film, a picture, of the 1952 shot. The area, if I were to describe it specifically, would be translatable into the number of megatons involved, which is a matter of military secrecy.

The effects, you said the effectiveness—I don't know exactly what you meant by that, sir, so I don't know how to answer it.

MR. WILSON—Well, I don't mean in the percentage of the effectiveness of or the efficiency of the blast itself. But many people in Congress, I think many elsewhere, have been reaching out and grasping for some information as to what happens when the H-bomb goes off, how big is the area of destruction in its various stages; and what I am asking you for now is some enlightenment on that subject.

A.—Well, the nature of an H-bomb, Mr. Wilson, is that, in effect, it can be made to be as large as you wish, as large as the military requirement demands—that is to say, an H-bomb can be made as large enough to take out a city.

CHORUS—What?

A.—To take out a city, to destroy a city.

MR. SMITH—How big a city?

A.—Any city.

Q.—Any city, New York?

A.—The metropolitan area, yes.

MARTIN AGRONSKY of the American Broadcasting Company—Mr. Chairman, may I ask this specific question: If you were to make a comparison, duplicating the explosion that occurred at Eniwetok, with this building in which we are right now as the center, what would be left of this city of Washington?

A.—Well, I couldn't say, Mr. Agronsky, because the precise measurements of these two shots have not been completely calibrated. It may be as much as a month or two before I know the answer to it. It would be a very extensive—

Q.—Will you provide that answer at some time, sir?

A.—I won't make a definite commitment, but I would certainly like to.

MR. SMITH—Thank you, Mr. Chairman.