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# UNITED STATES ATOMIC ENERGY COMMISSION

VOLUME IX-B

In the Matter Of:

J. ROBERT OPPENHEIMER

CLASSIFIED TESTIMONY OF DR. LEE ALVIN DUBRIDGE

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## CLASSIFIED PORTION OF DR. DuBRIDGE'S TESTIMONY

MR. GRAY: Mr. Reporter, would you have the record show that at this point when it became necessary to question the witness about classified matters, Mr. Garrison and the others were excused. The record should show that Dr. Oppenheimer remains.

(Whereupon, counsel for Dr. Oppenheimer withdrew from the hearing room.)

BY MR. ROBB:

Q Doctor, I want to read you three paragraphs and ask you whether or not they state in substance the salient points of the introduction to the VISTA report.

A Is it proper, Mr. Chairman, for me now to ask what document the counsel is reading from?

Q I am sorry, but even now I cannot disclose what the document is, sir, and under the circumstances which we have it.

A Can you tell me from whose statement you are quoting?

Q I am told I can't do that either, Doctor.

MR. ROLANDER: That is correct.

BY MR. ROEB:

Q I am going to read you the three paragraphs, Doctor, and ask you whether or not they state in substance the salient points of the introduction to the VISTA report

2 which you have testified Dr. Oppenheimer helped to prepare.

A May I say I assume you mean the introduction to Chapter 5 of the VISTA report?

Q Yes.

"1. The available stockpile of atomic weapons should be divided into three equal parts (equal from the point of view of available fissionable materials). One part should be held in reserve, one part should be assigned to SAC, and the third part should be assigned to the tactical defense of Europe in accordance with the VISTA recommendations. Appropriate re-working of existing weapons should be begun at once.

"2. The U. S. should announce that no strategic atomic attack would be directed against Russia unless such an attack were first started by Russia either against ZI (which, I guess, means Zone of Interior) or against European Allies.

"3. At the present state of the art, the value of thermo-nuclear weapons cannot be assessed. Therefore, they are not included in the VISTA study."

Would like me to read any of those again, Doctor?

A I may ask you to read them again, but I think I can make some comments.

Q Do you want to take them up one at a time?

A Yes. Number 1: It was our suggestion in the

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report that the fissionable material stockpile be divided into three parts and we suggested rather generally that possibly an equal division would be suitable. I think we did not make it accurately equal. That a certain segment of the stockpile should be assigned to strategic air operation, a certain segment to tactical and a certain segment held in reserve to see how the war went and assigned then as the battle progressed.

We said that it is possible that three equal parts would be proper. In other words, without certifying to the particular words you read, the general idea of three parts of our stockpile was recommended by the VISTA project.

As to the second, I do not recall that we made any such recommendation, although, of course, this is a matter that the record of the final VISTA report would show.

Q Excuse me, Doctor, I was not asking about your recommendation. I was asking whether or not that was in the introduction which you had in November which was prepared with the assistance of Dr. Oppenheimer?

A I see. You are not asking whether this was in the final VISTA report, but in an intermediary version of the report.

Q Yes, sir.

A Since there were many intermediate versions, it is hard for me to swear as to what any one of them said.

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But I do not recall any such recommendation ever being proposed that we should announce anything about our strategic intentions relative to an attack on Russia.

We were specifically not supposed to examine strategic air warfare problems in the VISTA stage. But since this question of the possible use of fissionable materials for tactical situations came up we had to make some suggestions that tactical as well as strategic operations were useful for military purposes.

I do recall that the final version of the report --

Q Excuse me, but would you confine yourself to the draft for the time being. I don't want to cut you off in any way, however.

A Yes. I can recall of no such specific recommendation ever being included in a version of the report.

Q Whether it was this specific recommendation or not, was there anything comparable to this that you recall?

A That is what I was trying to get at. This statement reminds me of a statement which was in the report, namely, we recognized the possibility that at the outbreak of a war we, The United States, would decide not to initiate instantly a strategic attack on the USSR, and that in that case we might still want to use atomic weapons on the battle field.

Certainly the report at various stages did have

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a suggestion of this sort in it -- that there might be a situation which would arise in which we would withhold a strategic attack.

Q Was that in the final report?

A That was in the final report and in the intervening ones, too, I think, or something similar to it.

Q Now, the third suggestion.

A Our point of view throughout the VISTA study on thermo-nuclear weapons was that we did not see that they had tactical value. We made no comment on their importance as strategic weapons. But we did say that in as much as we see at the present time, no tactical usefulness to thermo-nuclear weapons, we will not further discuss them.

Q Then this "third" is about right.

A Except for the very important word "tactical". We did not see these thermo-nuclear weapons being used on the battle field and we made no comment on their strategic use.

May I explain that point a bit.

Q Yes, sir.

A We were envisioning a battle in Western Europe, presumably an invasion by Russian armies of Western Europe, and that we would be forced then into a battle of the NATO armies against the RUSSIAN armies in Western Europe between the Rhine and the border of the Soviet Zone.

We looked at the question of atomic weapons being

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used on armies in that area. We felt that if a thermo-nuclear weapons was available and used on armies, that its area of destruction through blast and its area of damage through radio activity would be so great that we would be destroying many civilian populations in a friendly area -- Western Germany -- to such a great extent that the use of such a terribly destructive weapon in Western Germany was not feasible and not desirable and would be against our interests.

Therefore, we saw no tactical use for it in that kind of a battle. Therefore, we made no further study of the thermo-nuclear problem in that report.

Q I see. Was it then that particular point that General Quesada wish to present some information to you gentlemen?

A General Quesada did not address himself to that particular point, as I recall. He may have agreed with it. I don't recall that he disagreed with it.

Q Doctor, I have before me a paper which is marked, "Extracts from VISTA report, Introduction to Chapter 5, Atomic Warfare", which, I assume, is the final draft. I am going to hand it to you in just a moment.

I notice in here at the top of page 2 the sentence, "We have a prospect, probable but not certain, of a thermo-nuclear system in the range of many megatons that may be

7 available within two years although cost, characteristics and utility cannot today be estimated."

I will hand you this and ask you if you would please, sir, give your comments on the one sentence I read or anything else you want to talk about.

MR. GRAY: Does that purport to be the final report?

MR. ROBB: That is what I understand. Perhaps Dr. DuBridge could help us on that. It just came to me, Mr. Chairman, at noon today.

THE WITNESS: I cannot swear that I know this is a true copy of the final report. I do recognize it as being very similar to the final version.

I would like to note that the sentence which you read was at the end of several paragraphs which stated that the fissionable material resources of the U.S. were growing at a very large rate and that "We have a resource of great magnitude and that even in the near future we can contemplate many military applications and a wide variety of targets and target systems", and then it goes on to describe a number of different warheads available in the fission weapon ranging from 1 to 500 kilotons. Then it goes on to describe the various sizes and diameters of such fission weapons and stating how the fissionable material supply is increasing and also design improvements are increasing our stockpile.

As one element in this picture of our atomic

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weapon arsenal, we say that we have this prospect, probable but not certain, of a thermo-nuclear weapon in the range of many megatons that may be available in two years, although cost, characteristics and utility cannot today be estimated.

It seems to me that that was a statement at that time of a fact or a possibility and I think it was a correct statement at the time -- that there was probable but not certain a thermo-nuclear system in the range of many megatons and that the cost, characteristics and utility could not then be estimated.

BY MR. ROEB:

Q I had the idea from some of the testimony here that in the spring of 1951 there was a discovery made which made the production of a thermo-nuclear weapon certain. Am I mistaken about that?

A Certainty in a new field does not occur until one has the final test made. There was no stage at which certainty came until the tests were successful. At this time there was no test which had shown a yield of many megatons. I think it could not be certain at that time that a many megaton yield was available. It is correct to say that there was a prospect, but not certainty.

Q What sort of tests had been made at that time, Doctor?

A This was the latter part of 1951. The final report

9 went in the early part of 1952. There was just the one so-called GREENHOUSE test. I do not recall the exact characteristics of that test.

Q Was some kind of a thermo-nuclear gadget tested?

A The answer is that there were some tests. I personally did not familiarize myself with the details of the thermo-nuclear tests at that time because of what was previously said, that it did not seem to be an essential part of our VISTA study.

It does seem to me, Mr. Chairman, that it is perfectly true that there was a very complex technical situation in the laboratory and in the test which developed from 1946 even right up until the present day.

The technical problems associated with the developments cannot be discussed in public because they are highly classified, but these developments have been very complex and at each stage there have, of course, been differences of opinion as to the best technical approach and the possible prospects of success and the degree to which success would be achieved and how soon it would be achieved and what the costs would be.

It seems to me that in a new technical field of this sort, differences of opinions, exchanges of ideas are essential, inevitable and desirable. And to interpret any such differences of opinion or statements made during the

10 process as evidences of a lack of integrity or loyalty to the United States is quite unwarranted.

Q I was not attempting to interpret anything. I was trying to find out what happened.

A The purpose of this inquiry, however, is to inquire into the loyalty of an individual. I only want to make it clear that my position is that technical differences of opinion are desirable parts of the development of any new device and progress in any direction in the field of science and technology.

Q Did Dr. Clark Milliken dispute the conclusions expressed in the draft that you read there?

A In this (indicating)?

Q No, sir; the draft that you read in November, 1951, at the meeting in Pasadena?

A Possibly. Many people argued about it. The VISTA study was a study in which all possible ideas were stated, explored, inquired into, argued about, disagreed about. There were many points of argument. When we finally got our final report written, it was, I think, unanimously agreed to. I cannot recall the nature and precise timing of the many discussions and disagreements that went on in the process.

Q I can well understand that.

MR. ROBB: Mr. Chairman, that is all the questions I can to ask about this particular subject. Does the Board

wish to ask any questions? If Dr. Oppenheimer has any questions, I would be very glad to help him phrase them, if he wants any help.

MR. GRAY: I think I have no questions about this particular matter. Do you, Dr. Evans?

DR. EVANS: No.

MR. CHAY: Mr. Morgan?

MR. MCCANE: No.

MR. GRAY: Dr. Oppenheimer?

DR. OPPENHEIMER: Do you remember the views of General Quesada and Mr. McCone of the rough drafts of Chapter 5 of VISTA?

THE WITNESS: Yes, very clearly. We presented to both General Quesada and John McCone --

MR. GRAY: "We" being who?

THE WITNESS: We being members of the VISTA group. I was present at the sessions. There were several; Dr. Oppenheimer was present at some, Dr. Lauritsen, Dr. Bacher, Dr. Christie were present at various sessions with McCone and Quesada.

I remember very clearly that both McCone and Quesada expressed rather enthusiastically their agreement with the approach of Chapter 5 and its introduction. They felt that this was a proper, useful and desirable approach to the subject, and they expressed agreement with it.

MR. GRAY: This was Chapter 5 substantially as it finally appeared.

THE WITNESS: It was an intermediate version at that time, but the ideas were substantially as in the final version.

DR. OPPENHEIMER: I don't think I should pretend to be counsel. If we are going off the top secret section, I will have counsel back.

MR. GRAY: Yes.

MR. ROLANDER: As a security matter, it is your testimony and you consider it to be top secret. You are familiar with this project?

THE WITNESS: That is true. I would not attempt to decide which sentences I uttered should be classified.

MR. ROLANDER: Until this is reviewed, I would like the reporter to consider this classified as top secret.

(Whereupon, counsel for Dr. Oppenheimer entered the hearing room.)