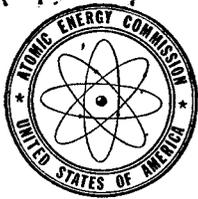


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UNITED STATES  
ATOMIC ENERGY COMMISSION  
WASHINGTON 25, D. C.

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DEC 12 1963

Honorable John A. McCone  
Director of Central Intelligence

Dear Mr. McCone:

At the request of Dr. Seaborg, I am enclosing a copy of the transcript of a press conference of November 30, 1963, in which Andronik Petrosyants, Chairman, USSR State Committee on the Utilization of Atomic Energy, and party, Dr. Seaborg and other members of the Atomic Energy Commission participated. As you know, Mr. Petrosyants and colleagues visited installations of the Atomic Energy Commission during November in reciprocity for the Seaborg visit to the Soviet Union in May 1963.

It is of interest to note on page 10 of the enclosed, Mr. Petrosyants' response to a question regarding the application of nuclear energy for space exploration in the Soviet Union.

A comprehensive report of the visit of the Soviet delegation is being prepared and will be provided to you.

Sincerely yours,

Harry S. Traynor  
AEC Representative to the  
U. S. Intelligence Board

Enclosure:  
Transcript of Proceedings  
dated November 30, 1963.

(EXECUTIVE REGISTRY FILE

AEC

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UNITED STATES ATOMIC ENERGY COMMISSION

PRESS CONFERENCE

Conference Room, Headquarters Building,  
United States Atomic Energy Commission,  
Germantown, Maryland

Participants:

GLENN T. SEABORG,  
CHAIRMAN, UNITED STATES ATOMIC ENERGY COMMISSION;

ANDRONIK M. PETROSYANTS,  
CHAIRMAN, USSR STATE COMMITTEE ON  
THE UTILIZATION OF ATOMIC ENERGY,

- and -

MEMBERS OF THE PRESS

Saturday, November 30, 1968

11:30 a.m.

QUESTION: I would like to inquire, both of Dr. Seaborg  
and Chairman Petrosyants, whether you have discussed any further  
extension of an international cooperation in atomic energy, and  
particularly in the field of development of high energy accel-  
erators, particularly like those mentioned in the Ramsey Report?

CHAIRMAN SEABORG: I might start on that. We haven't  
discussed in detail yet about the implementation of the agreement.

1 however, in the field of high energy physics, there have been  
2 some discussions at the operating level between Professor Panova  
3 who came in to the meeting today from Stanford partly because we  
4 passed his laboratory, due to the cancellations and his counter-  
5 parts, Drs. Bogolyukov and Artsimovich.

6  
7 These discussions are going to continue, but so far as  
8 the implementation of exchanges in the field of nuclear power,  
9 we are in correspondence about that and have some tentative plans  
10 worked out, and we hope that exchanges in that field will begin  
11 early next year.

12 QUESTION: I was wondering about the joint construction  
13 of a joint plan, like a 100 BEV machine.

14 CHAIRMAN SEABORG: No. We haven't explored that, other  
15 than to mention it in conversation. No other plans have been made

16 QUESTION: Might I inquire as to the reaction of the  
17 Russian delegation to the prospects of building a very large  
18 accelerator?

19 CHAIRMAN PETROSYANTS: I can answer this question. We  
20 have merely talked about these questions with Dr. Seaborg when  
21 he visited with us in the Soviet Union. Then, these questions  
22 were touched upon at the International Conference in Dubna in  
23 August of this year.

24 Then there were individuals, Dr. Panovsky, Dr. Veksler,  
25 but so far Chairman Seaborg has answered correctly. We have not as  
26 yet reached that stage of discussion so as to discuss the

1 technical details of this project.

2 QUESTION: I would like to ask Chairman Petrosyants  
3 what he saw in our facilities that he does not have, that he  
4 would like to have most? What peaceful nuclear devices that he  
5 saw which the USSR doesn't have that he would like most to have.

6 CHAIRMAN PETROSYANTS: I must say that we have seen  
7 many installations, and quite a sufficient number of laboratories  
8 and institutes. Other devices and equipment that we do have --  
9 but rarely we did see some things which we do not have on that  
10 scale.

11 The very last installation, for example, that we have  
12 seen, the nuclear power station Enrico Fermi, we do not have  
13 such a station. It is quite a powerful station and it is very  
14 interesting to us.

15 Well, I could cite a number of other installations.  
16 The Boiling Reactor station, for example, we have such a station  
17 in the Soviet Union, but this matter has progressed significant-  
18 ly further with you.

19 QUESTION: Which "Boiling Water" reactor was that?

20 CHAIRMAN SEABORG: Dresden.

21 QUESTION: Might I ask the reaction to the Brook  
22 Haven particle accelerator?

23 CHAIRMAN PETROSYANTS: That is right. Among our  
24 delegation we have two specialists, Mr. Artsimovich and Mr.  
25 Bogolyubov, and therefore I will ask them to question.

if you have no objection.

MR. ARTSIMOVICH: I must say that, speaking for myself and for Professor Bogolyubov, this accelerator has made an excellent impression upon us. Of course, we did know of its existence before.

I would like to say that both the technical aspects of this accelerator as well as the scientific program which is conducted there deserve the very highest scientific approval.

QUESTION: Would it be possible to have a progress report from Dr. Artsimovich and Dr. Bogolyubov on the 70 billion electron volt accelerator, which I understand is under construction in Moscow?

CHAIRMAN PETROSYANTS: What kind of a report?

QUESTION: When do you think it will be ready?

CHAIRMAN PETROSYANTS: I think I will ask Mr. Bogolyubov to answer that, inasmuch as he is the scientist in charge of that accelerator.

MR. BOGOLYUBOV: This accelerator is now being worked on very intensively, and we hope it will be completed in 1965. It is located in Serpukhof, and at the same time work is being conducted with reference to reviewing the scientific equipment for that accelerator.

QUESTION: Could you spell that location?

CHAIRMAN PETROSYANTS: S-e-r-p-u-k-h-o-f. It is

QUESTION: Could I ask this question of Dr. Artsimovich: I understand there is a controlled thermonuclear machine that has been started up by a Russian scientist named Jaffe. Could we get a description of this machine, since it is supposed to come closest of any machine yet to a genuine controlled thermonuclear reaction?. Could we get a brief description which would include a statement of how far this brings us down the road toward a worthwhile <sup>Fusion</sup> reaction?

MR. ARTSEMOVICH: First, I would like to state that the work which has been raised here has already been reported upon at several international conferences, for the last time in Paris during the summer of this year, and the very latest results which have been obtained, practically immediately prior to our departure from the Soviet Union.

I personally reported on this in a report at Princeton University. This research is being conducted in my Plasma Physics Division of the Kurchatov Atomic Institute. We consider that this research, which for the first time led to the obtaining of a stable confinement of the high temperature plasma, but this is only a first step on the path toward developing a controlled thermonuclear reaction.

I would not want to be a prophet at this time and predict when this problem will be practically solved, at least the exact time.

QUESTION: The question I have seen on the internet to  
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which nuclear power has been applied in the Soviet Union for civilian purposes, and is it considered economic at this time, and what is the projection for the application of power?

CHAIRMAN PETROSYANTS: Development of atomic energy in our country goes in a number of directions. First, the development of nuclear power stations. So far, we cannot boast of great profitability of these stations. This is generally explained by the facts which are very well known to all, including American atomic scientists.

After all, the explanation might be found in the fact that the stations being built are not of sufficient capacity. In this sense, they should have a capacity of at least 500 megawatts in a single block.

Secondly, the technology has not been sufficiently developed, and also because they are individually produced for industry. They are not yet the mass production item.

A great amount of expenditure is caused by the necessity for research work. That takes up a significantly large amount of money, but the work which is being conducted already now shows that within the period between 1968 and 1970 we would undoubtedly be able to produce economical, competitive atomic power. This is one direction.

The second direction, we have incorporated in industry to a significant extent various isotopes and radioisotopic equipment. These are these measurement devices, development of

the thickness of steel, or paper; levels of measurement, measurement of levels of liquids of various kinds, equipment for automatic regulations, and so on.

This has already introduced an economy which is felt on the scale of our whole state. In 1962, for example, and 1961 we had a saving in industry of approximately 300 to 250 million rubles. Roughly speaking, this is an equivalent amount in dollars. This is being developed quite extensively, and not only in Moscow or Leningrad, but also in such republics as, for example, The Latvian Republic, even in Uzbekistan, in all of the chemical enterprises, and so forth.

We consider that we, in this respect, are still at the initial stage of work, but in this case the economies produced are already being felt, and I don't even mention the field of medicine which is hard to measure in terms of money. After all, it concerns people's health, and for scientific research, for scientific work. In brief, this is the answer.

CHAIRMAN SEABORG: Did you want to ask another question?

QUESTION: Yes, sir.

About the thermonuclear -- controlled thermonuclear.

I understand that over here a kind of a rough magic number is  $10^{14}$ , representing the product, I believe the density, of a confinement. The product of confinement, times the second time, the particle density per cubic centimeter.

1 delegates to quantify this Jaffe device.

2 CHAIRMAN SEABORG: In terms of what?

3 QUESTION: In terms of our work.

4 MR. ARTSIMOVICH: I fear that if I were to give some  
5 rather detailed explanations they would go far beyond the  
6 boundaries of the present press conference, because I would  
7 have to go into these very technical questions. I would like to  
8 say that, really, there is, I wouldn't say a "magic number,"  
9 but a magic product of two numbers.

10 In order to achieve the practical application of a  
11 thermonuclear reaction, first of all the following conditions  
12 must be adhered to:--

13 THE TRANSLATOR: Suppose you say it in English?

14 MR. ARTSIMOVICH: It is the product of confinement  
15 times --

16 CHAIRMAN SEABORG: Times the density.

17 MR. ARTSIMOVICH: Must be over some limit.

18 CHAIRMAN SEABORG: Yes, and he had suggested --

19 MR. ARTSIMOVICH: I think that this is too small,  
20 in that really we need more --

21 CHAIRMAN SEABORG: Then  $10^{14}$  --

22 MR. ARTSIMOVICH: 10 in 15 will be something which  
23 we need, really, when you have action with the positive energy.

24 CHAIRMAN SEABORG: I think he was asking how close  
25 have you come

MR. ARTSIMOVICH: Oh, far away from this.

CHAIRMAN SEABORG:  $10^9$ ?

MR. ARTSIMOVICH: Yes. Now in the order of  $10^{10}$  in  $20^{10}$ .

CHAIRMAN SEABORG:  $10^{10}$ ; that is your answer.

Perhaps we could take one more question.

QUESTION: Dr. Petrosyants spoke of 100 megawatts in a single block. I would like to ask if the Fermi power plant is large enough by those standards?

CHAIRMAN SEABORG: No.

QUESTION: Or should it be still larger?

CHAIRMAN SEABORG: I can answer that. It is not in that category. It is an experimental plant aimed toward grading at some time in the future. Its power rating is much smaller than that, but on purpose. It is not an attempt to produce economic power at this time, at all.

QUESTION: Do we have a plant of this size?

CHAIRMAN SEABORG: Do we have a plant of around 500 megawatts that is economically competitive now?

QUESTION: Yes, sir.

CHAIRMAN SEABORG: Plants are being designed that when they are built apparently will be competitive over their lifetime with the cost of conventional fuel plants in the areas where they are being built. That is, in New England and California.

CHAIRMAN SEABORG: No, it wouldn't include Dresden.

That is around 180 to 190 megawatts, a really first generation plant. A follow-on to Dresden in the 400 to 500-megawatt area, in the same area, would be competitive.

DR. WILSON: Connecticut Yankee, Consolidated Edison, and Los Angeles Power and Light.

QUESTION: Dr. Petrosyants, what is the possibility of the application of nuclear energy for space exploration? Do you have any work in progress?

CHAIRMAN PETROSYANTS: In general, I could say a great deal that would be very interesting in this respect. We are working on this problem, but so far this is not a subject for our discussion today. Next time, perhaps, we will meet with you somehow, and perhaps we will discuss the subject, and then there we will exchange experiences with Dr. Seaborg.

So far, Dr. Seaborg did not question me on these problems in the Soviet Union and, quite reciprocally, I was equally polite here and did not ask these questions.

(Laughter.)

QUESTION: You did not have to ask them because it is not a secret in this country.

CHAIRMAN PETROSYANTS: I think I have answered your question clearly.

CHAIRMAN SEABORG: I think, with that interesting question and answer, we might draw the conference to a close.

Thank you very much.

(Whereupon, at 12:00 o'clock noon, the Press Conference was concluded.)

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