

SIO 87

MC 0572

[Institute of High Energy Physics, Serpukhov, 1967-1968, 1972]

MC 572

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BOX 607 FOLDER 5

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24 August 1972

Professor A.A. Logunov  
Director General  
Institute of High Energy Physics  
SERPUKHOV, Moscow District

Dear Professor Logunov,

I have looked into the question of the possibility of buying a CDC computer from USA by your Laboratory. I think that the situation has changed compared to the past. Previously it was impossible, now it is perhaps possible.

I do not believe, however, that it is possible to buy a 7600 at this time. The reason is that it cannot yet be fully utilized by your laboratory. It may be possible to buy a 6600 at this time. However, the transaction would take a long time - at least a year. I think it would not be advisable for your Laboratory to ask for a 6600 since it will be obsolete at the time you receive it.

I think that your Laboratory should plan to buy a 7600 at a later time, perhaps in three or four years. At that time you will be able to utilize fully a 7600. This seems to be an important condition. It would be good to begin negotiations about the 7600 computer on a high level soon, so that it would be possible to get it in a few years.

My information is personal and has not been officially approved by the US authorities. It represents merely my personal opinion.

I hope very much that there will be soon a modern American computer at Serpukhov in order to do more physics and as a symbol for the international character of science.

With best wishes.

Yours sincerely,

V.F. Weisskopf

CERN/CC/707  
Original: English  
3 May, 1967

ORGANISATION EUROPÉENNE POUR LA RECHERCHE NUCLÉAIRE  
**CERN** EUROPEAN ORGANIZATION FOR NUCLEAR RESEARCH

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COMMITTEE OF COUNCIL

Sixtieth Meeting

Geneva - 17 May, 1967

COLLABORATION WITH SERPUKHOV

COLLABORATION WITH SERPUKHOV

After discussions in the Scientific Policy Committee and Committee of Council, the Council, at its Thirty-third Session in December 1966, authorized the Director-General to continue discussions with the State Committee for Utilization of Atomic Energy in the USSR with a view to presenting to Council in June the draft of an agreement which both parties might sign shortly afterwards.

Professor Gregory and Mr. Hampton spent the week of 9-15 April in the USSR discussing with Professor Petrosiants, of the State Committee, and Professor Logunov, Director of the Serpukhov Laboratory, and their staff the text of a possible agreement. The draft text (the English of which will be revised) is attached as Annex II to this document, and an agreed summary of the discussions (Annex I) was signed in Moscow by Professor Petrosiants and Professor Gregory.

The negotiations followed very substantially the lines which had been foreseen by us in the earlier exchanges of letters, copies of which were distributed at previous Committee of Council meetings.

It was evident that the Soviet Union were very anxious to have our material help in the construction of the RF separated beam which, in conjunction with the French bubble chamber, would constitute their most important physics instrument in the early years. In exchange for this, they were ready to give to CERN the right to propose a succession of electronics experiments, and to join CERN and its Member State institutes in the analysis of bubble chamber photographs.

The Convention

In summary, the proposed Convention provides:

- (i) that CERN will build and install a fast ejection system for the accelerator, and this will become the property of Serpukhov;
- (ii) that CERN will build and install RF separators for the fast ejected beam, and will leave these at Serpukhov for at least ten years of operation;
- (iii) that CERN will provide spares for both installations if these spares are not available in the USSR;

- (iv) that CERN will have the right to propose to the Scientific and Technical Council of Serpukhov (the equivalent of our Nuclear Physics Research Committee) a succession of electronics experiments, not more than one to be running at a time;
- (v) that CERN, and by agreement other laboratories in the Member States, may join Soviet or Soviet/French teams in the analysis of bubble chamber pictures; results would be jointly published in the names of CERN, the State Committee and, when appropriate, the CEA.

In general, there is little comment to be made upon the draft, but the few important points are listed below:

- (i) The Russians were insistent upon recognition in the Convention of their wish to have the extracted beam operating in 1969. We, however, could not, for technical reasons, accept as an obligation to do our part by that (or any similar) fixed date. The wording of Article 1.3, however, was finally accepted by the Russians, and we are prepared to be guided by it.
- (ii) It was clearly necessary for us to guarantee to leave the RF separators at Serpukhov for a considerable time. We agreed in Article 2.4 upon a period of ten years.
- (iii) We pressed hard for the international status of CERN staff to be recognized in Article 5. The Russians claimed that this would be difficult, but agreed to consult their Foreign Office.
- (iv) The initial period of validity of the agreement has, by the present drafting of Article 11, been extended by some two years. Our original proposal was that it should run for five years from the date of signature.
- (v) In our first proposals, we had asked to be able to do two electronics experiments. The Russians proposed that we should be able to carry out a succession of experiments provided not more than one is on the floor at a time. This is set out in Annex III.
- (vi) A form of words must be found in Annex IV which makes clear our right to give bubble chamber pictures for analysis to laboratories in Member States.

The cost

The following table shows the estimated cost of meeting CERN's obligations under the terms of Annexes I and II:

<u>1967</u>	<u>1968</u>	<u>1969</u>	<u>1970</u>
(in million Swiss francs, at 1967 prices)			
0.5	2.5	3.0	3.0

Next steps

Though Professor Petrosiants was ready to sign the final Convention in the course of the visit, Professor Gregory made it clear that he could not sign without approval of Council, and this could not therefore be before June. Professor Petrosiants was very anxious to have the Convention signed if possible by the end of June, to confirm CERN's constructing the fast ejected separated beam.

In order that the final text can be prepared for presentation to Council, and for signature immediately afterwards, the Committee of Council is invited to give its views on the matters of principle involved in the Convention. If Committee of Council members feel unable to accept certain terms of the Convention, it will be necessary for further negotiations with the State Committee to take place without delay.

In the light of the views expressed in Committee of Council, a revised English and French text will be sent immediately to the State Committee and will be circulated as a paper for the June Council session. The Council will then be asked to agree formally that the Director-General should sign the Convention.

As the Convention is one between institutes and not Governments, it does not seem necessary that Council approve the text in detail, having approved the principles embodied in it. This will allow any last minute changes of text to be made if these are necessary.

P R O T O C O L

OF NEGOTIATIONS BETWEEN THE STATE COMMITTEE FOR THE UTILIZATION OF ATOMIC ENERGY OF THE USSR (THE STATE COMMITTEE) AND THE EUROPEAN ORGANIZATION FOR NUCLEAR RESEARCH (CERN) ON SCIENTIFIC AND TECHNICAL COOPERATION IN THE FIELD OF HIGH ENERGY PHYSICS AT THE SERPUKHOV ACCELERATOR

During the period from April 10th to April 15th negotiations have taken place between representatives of the State Committee for the Utilization of Atomic Energy of the USSR headed by Professor A.M. Petrosyants, the Chairman of the State Committee, and of the European Organization for Nuclear Research headed by Professor B.P. Gregory, the Director-General of CERN, on scientific and technical cooperation in the field of high energy physics at the Serpukhov accelerator.

During these negotiations the parties discussed a draft Convention and expressed their wish to establish a close co-operation in carrying out joint research projects at the accelerator of the Institute of High-Energy Physics and have come to a common agreement on the possibility of concluding a Convention covering the following items:

1. CERN shall design, construct and supply, at its own expense, the equipment for the fast ejection of the proton beam of the accelerator of the Institute of High Energy Physics, which will be supplied to this Institute free of charge.

2. Both parties shall take all possible steps to reduce to the minimum the time of construction of the separated beam subject to the technical requirements and safety standards of the project, keeping in mind the wish that it should be put into operation in 1969 and not later than the date when the separated beam is required for bubble chamber experiments.
3. The parties have agreed that CERN shall construct a radio-frequency separator and its auxiliary equipment for the separation of high energy particles, which shall be put into operation in time with the proton beam ejection system. The separator will remain at the Institute of High-Energy Physics for a period of not less than ten years from the date of the first operation of the separated particle beam.
4. For the duration of the present Convention CERN will provide at its expense the ejection system and separator with spare parts and materials, which are not available in the USSR. The replaced parts will be returned to CERN.
5. Both parties have agreed on conducting an experiment using the electronic equipment, developed and tested at CERN. This experiment shall be started in the first year of the operation of the accelerator for physics experiments. Subsequently similar joint experiments may be carried out successively, but not more than one experiment at the same time. Proposals for joint experiments are to be submitted to the Scientific and Technical Council of the Institute of High-Energy Physics.

6. Both parties have agreed on the participation of CERN scientists in the work of mixed teams to analyse some pictures taken with bubble chambers operated at the Institute of High-Energy Physics. The results of the experiments shall be published jointly in the name of Soviet Institutes and CERN, or in the name of Soviet Institutes, CERN and a third party, having an Agreement with the State Committee.
7. The parties have recommended that the Convention should be signed in June or July, 1967. It shall enter into force on the date of its signature and shall continue in force for a period of five years, from the date of the satisfactory operation of the fast ejection system and separated particle beam.
8. The parties deem it desirable to find acceptable ways for the development and construction of apparatus for the analysis of photographs taken with large bubble chambers in order to carry out joint research work.
9. The parties, before signing the Convention undertake to carry on intensive work for the fulfilment of the obligations mentioned in this Protocol.

During its stay in the USSR the CERN delegation visited the Institute of High-Energy Physics and saw the state of construction of the 70 GeV proton accelerator and it also visited the Institute of Theoretical and Experimental Physics of the State Committee and the Lebedev Physical Institute of the Academy of Sciences of the USSR, to see the research work being carried out at these two Institutes.

At meeting took part:

on behalf of the State Committee for the Utilization  
of Atomic Energy: Mr. I.D. Morokhov, Mr. K.N. Mestcheriakov,  
Professor A.A. Logunov, Mr. G.S. Afonin, Mr. O.S. Lupandin;  
on behalf of CERN: Mr. G.H. Hampton and Dr. W.O. Lock.

The present Protocol is done in duplicate in the Russian  
and English languages, both texts being equally authentic.

(signed) A. Petrosyants

Chairman,

State Committee for the  
Utilization of Atomic Energy  
of the USSR.

(signed) B.P. Gregory

Director-General

European Organization for  
Nuclear Research

Moscow, April 13, 1967

CONVENTION

CONCERNING SCIENTIFIC AND TECHNICAL CO-OPERATION  
BETWEEN THE STATE COMMITTEE OF THE USSR FOR THE  
UTILIZATION OF ATOMIC ENERGY, HEREINAFTER CALLED  
"THE STATE COMMITTEE", AND THE EUROPEAN ORGANIZATION  
FOR NUCLEAR RESEARCH, HEREINAFTER CALLED "CERN".

The State Committee of the USSR for the Utilization of  
Atomic Energy and the European Organization for Nuclear Research,

CONSIDERING that the State Committee is at present constructing  
at the Institute of High-Energy Physics at Serpukhov a large proton  
accelerator of 70 GeV energy while CERN is operating at Geneva a  
similar accelerator of 28 GeV proton energy;

CONSIDERING that the Institute of High-Energy Physics and the  
CERN Laboratory have common interests in the field of fundamental  
research in high-energy physics and it is to the interest of the  
two Organizations to collaborate in this field;

HAVE AGREED AS FOLLOWS:

Article 1

Object of the Convention

1. The State Committee and CERN agree to carry out a joint scientific and technical programme at the 70 GeV proton synchrotron at Serpukhov.
  
2. The collaboration shall extend initially to the fields described in the Annexes to the present Convention, i.e.
  - Construction of a fast-ejected proton beam (Annex I);
  - Construction of a radio-frequency separator (Annex II);
  - Experiments making use of electronic techniques (Annex III);
  - Experiments making use of bubble chamber techniques (Annex IV).

Annex I, II, III and IV are an integral part of the present Convention.

3. Both parties shall take all possible steps to reduce to the minimum the time of construction of the separated beam (Annexes I and II), subject to the technical requirements and safety standards of the project, keeping in mind the wish that it should be put into operation in 1969 and not later than the date when the separated beam is required for bubble chamber experiments.
  
4. Additional proposals covering other fields of collaboration may be added by mutual agreement between the two contracting parties.

Article 2

Collaboration

1. During the time that the present Convention is in force, the contracting parties shall provide in good time all information and personnel necessary for the realization of the objectives of the Convention and for the furtherance of collaboration between them.
  
2. The State Committee and CERN shall assist in ensuring:
  - 2.1 the travel of personnel and the transport of personal goods within the USSR and the Member States of CERN;
  - 2.2 the movement of equipment, auxiliary apparatus, spare parts, etc., between their Laboratories;
  - 2.3 the exchange of all relevant documents, drawings, photographs, films and experimental data.
  
3. It is desirable that the technical and safety standards to be used in the construction and operation of equipment provided by CERN as described in the Annexes to this Convention should be those in use at CERN. The State Committee shall be informed in good time of those technical and safety standards used at CERN. If the above standards differ from those of the USSR, then the question of applying either of them has to be considered and approved by the Scientific Committee.
  
4. With the exception of the equipment described in Annexes I and II, the equipment provided by CERN under the terms of this Convention shall remain its property and shall, at the request of CERN, return to Geneva on the expiry of the Convention or on completion of an experiment. Equipment

provided by CERN as specified in Annex I will, on the expiry of the Convention, be handed over free of charge by CERN to the Institute of High-Energy Physics. The equipment provided by CERN under the terms of Annex II remains its property, but it will be at the Institute of High-Energy Physics for a period of not less than ten years from the date of the first operation of the separated particle beam.

5. Any parts replaced by spares provided by CERN under the terms of Annex I and Annex II shall, at the request of CERN, be returned to Geneva.

### Article 3

#### CERN Responsibilities

1. CERN shall, under its responsibility and at its expense, design, construct and supply the State Committee with the equipment specified in the Annexes to this Convention, namely,
  - 1.1 an ejection system for a fast-ejected proton beam (see Annex I);
  - 1.2 a radio-frequency separator and its auxiliary equipment (see Annex II);
  - 1.3 detector systems, electronic circuitry, data acquisition equipment for electronics experiments and auxiliary apparatus (see Annex III).
2. CERN shall give as soon as possible to the State Committee the detailed list of equipment to be provided with the relevant specifications and technical information.

3. The equipment shall only be brought into operation at Serpukhov by mutual agreement between the two contracting parties.

#### Article 4

##### State Committee Responsibilities

1. The State Committee shall in good time give to CERN the technical information needed for the realization of the joint programmes.
2. The State Committee shall, under its responsibility and at its expense:
  - 2.1 provide at the Institute of High-Energy Physics the buildings necessary for the equipment subject of the Annexes, supply them with electricity, compressed and liquid gases, cooling water or other refrigerants according to the technical requirements to be agreed upon additionally;
  - 2.2 design and construct the equipment not provided by CERN which is necessary to achieve the joint programmes;
  - 2.3 operate the accelerator and the beams of particles as necessary for the joint programmes;
  - 2.4 provide the usual general services (such as mechanical and electrical workshops, stores, technical services, etc.).

Article 5

Personnel

1. Each contracting party shall ensure the selection of staff of the necessary skills and competence to take part in the collaborative programme. The staff selected shall, for the period of their service with the collaborative programme, be attached to the contracting party concerned.
2. Each contracting party shall be responsible for the salaries, insurances and allowances to be paid to their staff.
3. The staff of each contracting party shall conform to the general rules for conduct and safety in force at the host establishment.
4. Each contracting party shall pay for the travel and living expenses of its staff when visiting the Laboratories of the other contracting party.
5. Each contracting party shall provide all assistance to the personnel and families of the other contracting party in respect of administrative formalities (visas, travel arrangements, etc.).

The State Committee shall provide the CERN personnel and their families staying at the Institute of High-Energy Physics with the apartments in the houses of the Institute on the same financial terms as for the staff of the State Committee.

Article 6

Transport of Equipment

1. Responsibility and expenses for the transport of goods from Switzerland to the Soviet border and back shall rest with CERN.
2. Responsibility and expenses for the transport of goods within the territory of the USSR to and from the Institute of High-Energy Physics shall rest with the State Committee.
3. Responsibility for the safety and insurance of the equipment en route shall be established under the same conditions as for the division of the costs of the transport, unless otherwise agreed.

Article 7

Responsibility for damages

1. Each contracting party shall bear financial responsibility for damages to its personnel or equipment.
2. The contracting parties agree to conclude, as soon as possible or at the latest by the date when the equipment provided by CERN arrives at the Institute of High-Energy Physics, an additional protocol to this Convention to govern responsibility for other damages.

Article 8

Finance

Each contracting party shall be responsible for the provision and control of the funds necessary to meet their respective obligations under this Convention.

Article 9

Scientific Direction of the Programme

1. Proposals for joint experiments at the accelerator of the Institute of High-Energy Physics shall be considered and approved by the Scientific and Technical Council of the Institute according to the procedure adopted by the Council.
2. To ensure the effective execution of the joint scientific and technical programme, CERN scientists shall participate in a consultative capacity in those meetings of the Scientific and Technical Council of the High-Energy Physics Institute which are concerned with the joint programme.

Article 10

Scientific Committee

1. For the duration of the present Convention, the Director of the High-Energy Physics Institute and the Director-General of CERN shall be advised by a Scientific Committee composed of not more than twelve members, appointed in equal numbers by the State Committee and CERN.

The Committee's Charter shall be approved by the State Committee and CERN.

2. The main tasks of the Scientific Committee shall include:
  - 2.1 to work out scientific, technical and organizational programmes and to co-ordinate works to be carried out;
  - 2.2 to advise the contracting parties on the status of the joint experiments, in particular, by submitting annual reports on the work carried out;
  - 2.3 to consider problems concerning data processing and recommendations on publication of the results of the joint experiments;
  - 2.4 to submit proposals considered necessary as a result of the development of the joint programmes.
  
3. The Committee shall appoint from among its members two co-chairmen. It shall establish its own plan of work and working methods. The Committee shall meet either at CERN or at the Institute of High-Energy Physics as often as necessary to carry out its tasks.

#### Article 11

1. The present Convention shall enter into force on the date of its signature and shall continue in force for a period of five years, from the date of satisfactory operation of the fast-ejection system and the separated particle beam. This date shall be agreed in writing by the two parties.
  
2. At the end of this period the Convention shall continue in force automatically from year to year unless six months written notice of termination is given by either of the contracting parties.

In witness thereof, the undersigned representatives,  
having been duly authorized, have signed this Convention.

Done at ..... , this ..... day  
of ..... , in the English, French and Russian  
languages, all texts being equally authentic.

ANNEX I

CONSTRUCTION OF A FAST-EJECTED PROTON BEAM

1. CERN and the State Committee shall jointly put into operation at the Institute of High-Energy Physics at the earliest possible date and, in conformity with Article 1.3 of the Convention, a fast-ejected proton beam to be used in conjunction with the RF separated beam.
2. CERN and the Institute of High-Energy Physics shall, not later than [ 30 September, 1967 ] establish by mutual agreement the necessary technical specifications, so that work may start at the two Laboratories without delay.
3. CERN shall at its expense design, construct, test and supply to the Institute of High-Energy Physics a fast ejection system. This system will include the ejection magnets together with their vacuum tanks and any moving mechanism necessary, pulse generators, power supplies and controls. Specialists of the State Committee shall take part in the above-mentioned work.
4. CERN shall at its expense assemble, adjust and start up the fast-ejected proton beam at the Institute of High-Energy Physics. The CERN team shall for this purpose be augmented by the staff from the State Committee after prior agreement between the contracting parties. The team shall remain under the authority of a Leader appointed by CERN until the installation and the first operation of the ejection system at Serpukhov is completed.
5. For the duration of the present Convention CERN shall be responsible at its expense to provide the fast-ejected proton beam with spare parts and materials which are not available in the USSR to ensure its proper operation.

ANNEX II

RADIO-FREQUENCY SEPARATOR

1. CERN shall at its expense design, construct, test and install a radio-frequency separator and its auxiliary equipment capable of giving a separation of kaons of energies up to 36 GeV/c, to be put into operation in time with the proton beam ejection system described in Annex I.

CERN shall be responsible at its expense to adjust and start operation of the RF separator on the beam of the Institute of High-Energy Physics.

2. CERN shall provide the staff required for the design, construction and adjustment of the radio-frequency separator and auxiliary equipment. Specialists of the State Committee shall participate in this work after prior agreement between CERN and the State Committee on the choice of such staff, in order to ensure the efficient operation of the separator at the Institute of High-Energy Physics.

3. The joint team formed in compliance with paragraph 2 of this Annex shall remain under the authority of a Leader appointed by CERN until the installation and the first operation of the system at the Institute of High-Energy Physics is completed.

4. For the duration of the present Convention CERN shall be responsible at its expense to provide the RF separator with spare parts and materials which are not available in the USSR to ensure its proper operation.

ANNEX III

ELECTRONICS EXPERIMENTS

1. During the first year of operation for physics experiments of the accelerator of the Institute of High-Energy Physics, an electronics experiment previously developed and tested at CERN shall be started at Serpukhov by a mixed team of scientists from CERN and its Member States and scientists from the Soviet Union.
2. Subsequently similar joint experiments may be carried out successively, but not more than one experiment at the same time.
3. Proposals for joint experiments shall be submitted to the Scientific and Technical Council of the Institute of High-Energy Physics.
4. The detector systems, electronic circuitry, data acquisition equipment and necessary auxiliary apparatus shall be provided by CERN at its own expense.
5. The Leaders of the teams concerned will be responsible for the execution of the experiments at the Serpukhov High-Energy Physics Institute. The leadership will be agreed by the two contracting parties. The teams will make such use of the equipment as they consider necessary for the success of the experiments. Any substantial modifications shall be agreed upon by the Scientific Committee. The data obtained during the experiments will be analysed by the teams either at CERN and/or in Serpukhov, and the results will be the object of joint publications.

6. The mixed teams shall consist of the necessary personnel for the design, mounting and technical tests of the equipment, and for the execution of the experiments at the accelerator and for the analysis of the data collected. In order to guarantee the homogeneity of the team from the point of view of the satisfactory execution of the experimental programme, the choice of the scientists concerned shall be agreed by the two Laboratories.

ANNEX IV

BUBBLE CHAMBER EXPERIMENTS

1. In preparation for the collaboration between CERN and Serpukhov in bubble chamber physics, Soviet scientists may join by mutual agreement CERN teams working on high-energy experiments using the CERN bubble chambers.
2. When bubble chambers come into operation at the Institute of High-Energy Physics scientists from CERN will participate in the work of joint teams consisting of scientists from the Soviet Union and from CERN, or in the work of joint teams of the USSR, CERN and a third party, in the analysis of some of the pictures taken. The participation of laboratories of other countries in the analysis of these pictures may be authorized by agreement of the contracting parties. The results of the experiments shall be jointly published in the name of Soviet Institutes and CERN, or in the name of Soviet Institutes, CERN and a third party.
3. CERN participation in the experiments with the bubble chambers of a third party shall be agreed upon in accordance with an agreement between the State Committee and a third party.
4. CERN will put at the disposal of the High-Energy Physics Institute all technical information necessary to enable the Institute to construct appropriate apparatus for the analysis of photographs. In the event that such apparatus is brought to the Institute by CERN for the use of teams working at Serpukhov, this apparatus will be made available also to the other scientists working at the Laboratory.
5. The parties deem it desirable to find acceptable ways for the development and construction of apparatus for the analysis of photographs taken with large bubble chambers in order to carry out joint research work.

ANNEX III

ELECTRONICS EXPERIMENTS

1. During the first year of operation for physics experiments of the accelerator of the Institute of High-Energy Physics, an electronics experiment previously developed and tested at CERN shall be started at Serpukhov by a mixed team of scientists from CERN and its Member States and scientists from the Soviet Union.
2. Subsequently similar joint experiments may be carried out successively, but not more than one experiment at the same time.
3. Proposals for joint experiments shall be submitted to the Scientific and Technical Council of the Institute of High-Energy Physics.
4. The detector systems, electronic circuitry, data acquisition equipment and necessary auxiliary apparatus shall be provided by CERN at its own expense.
5. The Leaders of the teams concerned will be responsible for the execution of the experiments at the Serpukhov High-Energy Physics Institute. The leadership will be agreed by the two contracting parties. The teams will make such use of the equipment as they consider necessary for the success of the experiments. Any substantial modifications shall be agreed upon by the Scientific Committee. The data obtained during the experiments will be analysed by the teams either at CERN and/or in Serpukhov, and the results will be the object of joint publications.

*Russia*      *Plum!*      *V.W.*

ORGANISATION EUROPÉENNE POUR LA RECHERCHE NUCLÉAIRE  
**CERN** EUROPEAN ORGANIZATION FOR NUCLEAR RESEARCH

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Genève, 12 July 1968

Dr. Glenn Seaborg  
Chairman,  
U.S. Atomic Energy Commission  
WASHINGTON, D.C.

Dear Glenn,

I visited the Soviet Union from July 1st to 10th in order to attend a IAEA-sponsored Panel in Dubna about future developments in nuclear structure physics. There is nothing of special interest to report about this Panel, except a most interesting visit to Plerov's laboratory.

I had an opportunity afterwards to meet with Vice Chairman Morokov, of the State Committee on the Exploitation of Atomic Energy in Moscow, and we discussed American-Soviet collaboration in high energy physics at the Serpukhov accelerator. After this meeting I went for two days to Serpukhov and visited the laboratory, and had extensive talks with the laboratory directors Logunov (Director General), Naumov (in charge of the accelerator) and Prokoshkin (Scientific Director). I would like to report on these visits.

Morokov's position was this : American participation in research at Serpukhov is conditional upon the signing of the US-USSR exchange agreement. Without this signature, there can be no collaboration, he said (thus taking a similar position as some of our diplomats). He expressed confidence that this signature will be forthcoming in the immediate future. (I believe that the same confidence was voiced by informed people in Washington, at my last visit on June 19.) I asked him whether there are any other conditions to be fulfilled, and I referred to an introductory remark of his, that relations between US and USSR "must improve" before collaboration is possible. He said, I believe quite explicitly, that the signing of the exchange agreement is the only condition, since it symbolizes the "improvement" to which he referred. I then asked what will happen after the signing will have taken place, especially in regard to your letters to Petrosiants, which have not been answered yet. He replied that these letters will be answered after the agreement is signed. He then expects that US and Serpukhov physicists will start to draw up a plan for collaboration. Then, on the basis of this plan, the U.S.A.E.C. and the State Committee would work out an official agreement.

I believe I understood him fully, but I cannot be completely sure that I have interpreted his words correctly, since my Russian is not too good and I had to rely partially upon an interpreter.

I arrived in Serpukhov at a historic moment. Two trucks with 12 tons of electronic equipment sent by air from CERN were unloaded in the experimental hall of the accelerator by CERN personnel. It was the first shipment of equipment for experimentation by Western scientists at the Soviet machine. There were no bureaucratic difficulties and everybody present - Westerners and Easterners - were aware of the importance of this first step. The CERN group expects to perform the first experiment together with the Russian colleagues before the end of the year. It is essentially a beam survey with some total cross-section measurements at higher energies than those available elsewhere.

I had several lengthy conversations with Logunov and Prokoshkin about US-USSR collaboration. Logunov acknowledged the receipt of the letter from Goldhaber, in which preliminary talks between scientists were proposed. He said he did not answer it because he knew the answer had to be negative as long as the exchange agreement is not signed, and he did not want to write a negative answer. Logunov and his friends assured me that they are very eager to collaborate with US physicists. They do not have enough operational and equipment funds and are very short of sophisticated electronics and computers. I got the impression that they would have liked to answer positively to Goldhaber's letter, but were prevented by the State Committee. I believe that they are not very experienced to deal with the Moscow bureaucrats, being all young and new in responsible jobs.

What follows now is perhaps an illustration of this point : I referred to my information that the signing of the exchange agreement will most probably happen very soon and asked Logunov to invite the American group referred to in Goldhaber's letter to Serpukhov immediately after the agreement is signed. He said he would prefer if Goldhaber, or somebody from US, would ask him again at that time. I replied that I consider this procedure as improper, since Goldhaber's letter must be replied to before any further correspondence can be expected from US. He understood that point and he chose the following way : he will reply immediately to Goldhaber, a) saying that nothing can be done before signature of the agreement, and b) asking for a new letter from US after the signature, in which preliminary discussions are proposed.

He and his collaborators were quite confident that all this will lead to fruitful discussions, in particular - as he said - if the US physicists propose to bring along on-line computing equipment, for example, of the type used in the Lindenbaum experiment in Brookhaven. They think that an official agreement between the U.S.A.E.C. and the State Committee could be reached about a year after the start of the discussions between scientists.

This is a reasonably complete sketch of our conversation. My general impression is rather positive. I definitely think that the Serpukhov scientists want collaboration with US and that the State Committee will not oppose it in the long run. I believe that we have a good chance of obtaining access to the Serpukhov accelerator, if and when the exchange agreement is signed and if we propose a collaboration in which there is some advantage for them also, by getting acquainted and making use of sophisticated electronics and computer equipment. The possibility of having a similar arrangement in the future at the 200 BeV accelerator was also mentioned.

I just heard that Jerry Tape will be coming through Geneva soon and I will have an occasion to talk to him about these problems.

With very best regards.

Yours sincerely,

*Viki*  
V.F. Weisskopf

c.c. Dr. Jerry Tape  
Dr. William Wallenmeyer  
Professor W. Panofsky



UNITED STATES  
ATOMIC ENERGY COMMISSION  
WASHINGTON, D.C. 20545

*Russia*

JUL 23 1968

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Massachusetts Institute of Technology  
Cambridge, Massachusetts 02138

Dear Viki,

I have received the report on your discussions at Dubna and Serpukhov and am quite grateful for your informative comments.

I naturally was interested in the mention of your visit to Flerov's laboratory and, if you think it useful, certainly would appreciate your further observations on the work being conducted there.

As you probably know, the Cultural Exchanges Agreement was signed in Moscow on July 15. Now we are looking forward to the signing in the very near future of the Memorandum on Cooperation in the peaceful uses of atomic energy.

I agree with you that we should expect the Soviets at least to respond to Dr. Goldhaber's letter as a first step.

Thank you again for keeping in touch.

Cordially,

Chairman

Russia

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T  
8.14

BROOKHAVEN NATIONAL LABORATORY  
ASSOCIATED UNIVERSITIES, INC.  
UPTON, L.I., N.Y. 11973  
TEL. AREA CODE 516 YAPHANK 4-6262

DIRECTOR'S OFFICE

August 12, 1968

Professor A. A. Logunov  
Director  
Institute of High Energy Physics  
Serpukhov, Moscow Region, USSR

Dear Professor Logunov:

I was glad to receive your letter of July 11 which arrived this weekend. You expressed the hope that it will be possible to discuss the question of joint experiments at the Serpukhov accelerator after the Memorandum concerning Cooperation in Peaceful Uses of Atomic Energy between the State Committee of the USSR for Uses of Atomic Energy and the USA Commission on Atomic Energy is signed.

Now that the agreement is signed I would like to suggest that a visit be arranged for the group of high energy physicists (about whom I wrote to you in my letter of May 3, 1968) either just before or just after the USSR National Conference on Particle Accelerators which is to be held on the 9-18 of October 1968 in Moscow.

Sincerely yours,

Maurice Goldhaber  
Director

cc: G. F. Tape THIS COPY FOR  
H. L. Kinney  
W.K.H. Panofsky

Received in Office of G. F. Tape  
Date 8/13 Time 3:52

Prof. A.A. Logunov  
Institute of High Energy Physics  
Serpukhov, Moscow Region  
U S S R

Prof. M. Goldhaber,  
Director  
Brookhaven National Laboratory  
Upton, L.I., N.Y. 11973  
U S A

July 11, 1968

Dear Professor Goldhaber,

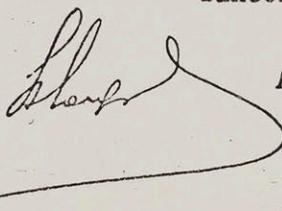
Thank you very much for your kind letter. I was pleased to know that American physicists are interested in doing joint experiments at the Serpukhov accelerator.

As far as I know a Memorandum concerning Cooperation in Peaceful Uses of Atomic Energy is now under discussion between the State Committee of the USSR for Uses of Atomic Energy and the USA Commission on Atomic Energy .

I hope that in case of successful completion of these negotiations there will be possible to discuss the question of joint experiments at the Serpukhov accelerator.

With best wishes,

Sincerely yours,



A. Logunov

REC'D  
AUG 9 1968

PRIVATE

August 30th, 1968

*Russia*

MEMORANDUM TO THE FILES

Subject : Discussions on US/SERPUKHOV Collaboration

Present : R.M. Sulaev - USSR (Serpukhov)  
V.P. Dzhelepov - USSR  
A.A. Komar - USSR (translator)  
Wolfgang K.H. Panofsky - USA

- (1) I explained that Goldhaber was going to join us but was tied up during one of the sessions.
- (2) I reviewed the background correspondence involving first USAEC Commissioner Seaborg and SAEC Chairman Petrosiants, followed by the correspondence between Dr. Goldhaber and Academician Logunov. I asked Sulaev whether he was familiar with this correspondence and he gave a non-committal reply.
- (3) I pointed out that in informal discussions involving Academician Logunov and Dr. Tape, the month of October was suggested as a likely date for the meeting at Serpukhov of the five American scientists proposed in Dr. Goldhaber's letter of May 1968. I also added that it was no longer necessary to take this date seriously since it had been fixed in relation to the National USSR Conference on Accelerators and since there would be little overlap, if any, in attendance at that Conference with the delegates to the Serpukhov discussion. Dr. Sulaev replied that such a visit would have to be either in the early part of October or in December since discussions with CERN and the French were taken place in between those two dates and they would not like to carry out such discussions simultaneously.
- (4) Sulaev said that he could state that there would be no objection to a visit by American scientists to Serpukhov in October. I replied that we did not wish this to be an ordinary visit to look at the accelerator facilities but that it was our idea that this visit might lead to discussion of technical collaboration at Serpukhov. Therefore we would have

to insist on a formal reply to Dr. Goldhaber's letter which should constitute a formal invitation for the delegation. I also pointed out that in view of the worsened international climate caused by the Czechoslovakian situation, such an invitation would have to be reviewed again by the US Atomic Commission and that there was therefore no certainty that the visit could go forward even if such an invitation letter was written.

(5) Sulaev and Dzhelepov replied that they understood the situation and that they certainly agreed that this visit was to be a serious discussion of plans for possible future US participation at Serpukhov.

(6) Sulaev agreed that such a letter replying to Dr. Goldhaber would be written as soon as possible and would be signed by Dr. Logunov or, should he be unavailable, by Dr. Sulaev. I replied that Dr. Goldhaber and myself would be available for further discussion during the balance of the Vienna meeting.