

R. W. Cook, Director of Production, Washington

March 20, 1953

S. R. Sapirie, Manager, Oak Ridge Operations

REQUEST FOR FOREIGN TRAVEL - DR. PAUL C. AEBERSOLD

SYMBOL: M:SRS

Attached for your consideration is a request initiated by Dr. Paul C. Aebersold for European travel this summer to attend the Seventh International Congress of Radiology and visit atomic energy groups in Britain, France, Belgium, Denmark and Sweden. The memorandum accompanying the request covers fully the explanation of the purpose and justification for the visit.

I have not recommended approval of the request as I have already recommended approval of a similar request from Dr. George Manov of the Isotopes Division for European travel this summer to attend the Seventh International Congress of Radiology and visit several European institutions, in connection with his attendance at the Congress. Because of the sensitive nature of this type of expenditure and the limited travel funds available, I am not in a position to defend approval of two representatives of the Isotopes Division travel to Europe at approximately the same time. In addition, we are constantly having to exert pressure on the ORNL to limit the number of foreign travelers from that location and will probably find that problem complicated some if it appears as if we are not practicing the same restraint within our own organization. However, since the Isotopes Division performs an AEC-wide function, it would appear to be more appropriate to have the request evaluated at the Washington level.

I am highly impressed by the job that Dr. Aebersold has done and is doing in the Isotope Program and, therefore, would like to make sure that I am not doing him an injustice by stopping his request at this level.

S. R. Sapirie

Enclosure:

Memo Jones to SRS, 3-19 with encls.

Sapirie:sm

REPOSITORY *Oak Ridge Operations*  
 COLLECTION *Records Holding Area*  
*Documents 1944-1994*  
 BOX No. *H-190-4: Bldg. 2714-H,*  
*Security + Intelligence*  
 FOLDER *Visits to Foreign Countries*

*Office Memorandum* • UNITED STATES GOVERNMENT

TO : S. R. Sapirie

DATE: March 19, 1953

FROM : T. R. Jones

SUBJECT:

Although I am not sure that the appearance of my signature on the attached memorandum and travel order is appropriate, they have been typed for my signature, as requested by the Director, Isotopes Division, March 18, 1953. This is also understood by the Assistant Manager for Operations.



T. R. Jones

1063346

S. R. Sapirie, Manager, Oak Ridge Operations

March 19, 1953

T. R. Jones, Executive Officer, Isotopes Division

EUROPEAN VISITS AND ATTENDANCE AT 7TH INTERNATIONAL CONGRESS OF  
RADIOLOGY BY DR. PAUL G. AEBERSOLD

SYMBOL: OI:TRJ

Dr. Aebersold proposes to visit Europe this summer for the following purposes: 1. To gain first hand information abroad on a wide variety of items concerned with the production, distribution, use and control of radioisotopes. 2. To present a paper and exhibit at the Seventh International Congress of Radiology to be held in Copenhagen, July 19-25. 3. To attend an International Symposium on Radiobiology, July 16-18 also to be held in Copenhagen. 4. To assist in continuing liaison on the unclassified peacetime uses of atomic energy already established with the atomic energy groups and isotope distribution committees in Britain, France, Belgium, Denmark and Sweden. These purposes are further defined below.

1. Information. Information would be sought on a wide variety of items of such interest for the proper carrying out of the U. S. isotopes distribution program, as follows:

a. Production

(1) Gamma ray sources. Much development has been undertaken, especially in Britain, of gamma ray sources. These include a variety of isotopes not yet exploited in the U. S., such as low energy emitters Tm 170, Am 241, Ba 133, and high energy emitters Eu 152-154, Ta 182, and Ir 192.

(2) Beta ray sources. Several European firms have devised unique ways of mounting beta ray sources, such as Sr 90, Ru 106, and Tl 204. It is indicated that the sealing procedures and hence the health safety aspects may be superior to those developed in the U. S.

(3) Alpha ray sources. Polonium is being used in a number of industrial devices abroad, and inasmuch as we soon intend to make reactor-produced polonium available for industrial uses in this country, we would benefit from first hand knowledge of how such production and distribution is being handled in Europe.

(4) Radioactive compounds. European commercial firms are now making radioactive compounds for tracer research as well as

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March 19, 1953

for clinical use. One British distributor is developing a considerable U. S. business through an American firm as its agent. We should like to know more about the way this phase of the program is being developed and handled abroad. One item of particular interest is the control of purity. It has recently been found that certain C 14 compounds decompose rather rapidly as the result of their own internal beta irradiation. British considerations of this problem would be solicited.

b. Shipment. The British are now making almost as many shipments per month as ORNL. They have made innovations in the packaging and manner of shipment which are of interest to us.

c. Economics. Stanford Research Institute is now making a study for the Commission of the economics of the production and sale of radioisotopes. It is of interest to learn the experience of the British in this regard, especially the degree of government subsidy on items to be distributed in the U. S.

d. Radiation effects. Much interest has developed in the U. S. on the use of radiation for the cold sterilization of foods and drugs. Waste fission products are a likely potential source of radiation for this purpose. Developments and studies along this line are also being undertaken abroad, and the experience there should be ascertained.

e. Regulations and controls. The Commission is now in the process of developing formalized regulations and standards to cover the wide variety of circumstances encountered in the distribution, handling and utilization of radioisotopes. Several countries in Europe have had considerable experience in government regulation of all radiation sources, including radioisotopes. Meetings with the atomic energy groups, isotope committees and public health officers of several of the main countries would be of much value in this regard.

f. Medical uses. Although the medical uses abroad in general parallel those in the U. S., certain developments are unique or are being more extensively exploited. These include low energy gamma ray sources for diagnostic purposes, intracavitary use of liquid sources, interstitial applicators and special beta ray surface applicators. These would be reviewed with respect to the development of the radio-materials and types of sources as well as to the type of allocation and regulation problems involved.

g. Industrial uses. As is the case for medical applications, the industrial uses abroad parallel those in the U. S. but again the type and degree of exploitation is different. For example a wider

range of isotopes have been used in industrial radiography and thickness gages. Beta ray as well as alpha ray static eliminators are being more extensively exploited. Since American industry is now learning about these developments, and will either adopt them or import the materials or devices, we should be prepared for the problems to be encountered in the U. S. production, utilization and control.

2. Seventh International Congress of Radiology. Dr. Abersold has been invited to present a paper and exhibit at this Congress. The paper would be on "Radioisotopes Useful in Radiology and Radiobiology". Preparation of an exhibit on "Radiological and Radioisotope Research Supported by the U. S. Atomic Energy Commission" has been viewed favorably by Drs. Bugher and Dunham of the Division of Biology and Medicine, as a joint exhibit with the Isotopes Division. The exhibit would be drawn on cardboard mounts, would be very inexpensive to produce and ship, and would require no additional funds than already provided for in the Isotopes Division's budget.

Dr. Abersold has a long professional background pertinent to attending this Congress. He has been in radiological physics since 1935, is an Associate Fellow of the American College of Radiology, a member of the American Radium Society and is certified in radiological physics by the American Board of Radiology. A list of his other professional qualifications pertinent to the radiological field are appended. The Congress will include symposia and numerous papers on radioisotope measurement and use.

3. International Symposium on Radiobiology. This Symposium is to be held at Copenhagen just prior to the above Congress. Consequently attendance would require only three additional days. It will bring together key workers in the field of radiobiology from many countries and should give an excellent picture of the present status of this field. Many aspects of radiobiology directly involve radioisotopes or concern radiation damage and consequently are closely related to isotope utilization. In addition to this specific interest in radiobiology, Dr. Abersold is a pioneer research worker in radiological physics and radiobiology. During the period 1934 to 1942 he was the key physicist for the first radiobiological work undertaken at the University of California Radiation Laboratory. He is author and co-author of a considerable number of publications in both radiological physics and radiobiology, including the first comparisons of the biological effects of 200 kv x-rays, 1000 kv x-rays and neutrons, first establishment of the differential effects of neutrons, first tissue dose measurements used as the basis for neutron protection, tissue dose measurements with radioisotopes, and depth dose measurements for various high voltage x-rays. Although now engaged in

administrative work, his contributions in discussions with workers in the field of radiobiology are still of value.

4. International liaison. Isotope distribution and utilization is still one of the major and most rapidly growing areas for international cooperation in atomic energy. The emphasis will rapidly change to reactors, but at the moment isotopes are a very active and appreciated area of cooperation. In addition to the British and Danish visits, very short visits are proposed to France, Sweden and Belgium. These have been indicated by Mr. John Hall to be of value to the functions of the Office of Special Projects. He also endorsed the proposed use of exhibits on peacetime programs of the Commission at International Congresses.

In 1950 Dr. Abersold visited the atomic energy projects and official isotope committees of these same countries and established a desirable liaison with these groups. He has continued this liaison through correspondence and supplying of unclassified information related to isotope production and utilization. It is appropriate and it has been appreciated that the director of the U. S. isotopes program show direct personal interest in the development of the isotopes program in those countries cooperating with us. Many letters of gratitude and appreciation have been received. In view of the greatly increased activity in the atomic energy field in Europe since 1950, further personal liaison along the lines established in the previous visit would still be desirable. The visits this time would be for only a few days to each country to reestablish the personal liaison and direct cooperative attitude of the U.S.A.E.C. in this unclassified peacetime area of atomic energy.

A list is appended of proposed places and institutions to be visited, approximate days involved and purposes. A proposed itinerary is also appended to indicate the approximate number of days involved. Although many of these places were visited by Dr. Abersold in 1950, the situation has changed materially since that time. Europe now has several sources of supply of reactor produced isotopes, a greatly increased number of users and a very accelerated program of industrial utilization. European firms now offer to American as well as European markets a wide variety of instruments, processed radioisotopes and industrial devices using isotopes. He proposes to give special attention to the secondary businesses related to isotope processing and usage.

In planning future production, distribution methods and control procedures in the United States, Dr. Abersold considers it desirable to follow the progress in these activities in Europe. Although the Isotopes Division makes every effort through literature and correspondence to follow isotope developments in Europe, it is believed that

March 19, 1953

developments since 1950 have been so extensive as to warrant his firsthand visit to some of the most active groups.

Other Considerations. Although Dr. Manov of the Isotopes Division would be traveling in Europe at approximately the same time as Dr. Aebersold, the purposes of Dr. Manov's trip are independent and their backgrounds and responsibilities are different. The primary justification for Dr. Manov's trip is to assist two international commissions in the establishment of the proper units and standards for widely used radioisotopes. His visits to Harwell and to a few of the major institutions using isotopes would be to discuss problems of standards, measurements and radiological safety practices. In the few cases where both would visit the same institution the discussions would be along the lines of their respective specialties and responsibilities. Dr. Manov's attendance at the Congress is only incidental to the fact that one of the Commission meetings is held in connection with it, and he will attend only those few sessions of the Congress pertinent to his functions. Thus, although the two trips may be simultaneous this is only by coincidence in relation of the two international commission meetings with the time of the Congress. The trips are planned to avoid duplication of effort and for both to make efficient use of time in collecting different categories of information.

Dr. Aebersold's trip calls for being away a total of approximately 30 work days. Regarding time away from work he proposes to do as he did in 1950, namely not to use his full permissible annual leave. In 1950 he did not use 2 1/2 days of annual leave and lost it at the year's end. This partly compensated for the time taken by the trip. This year he plans not to use 15 days or more of leave. His office absence will thus not be significantly greater than normal absence on other trips plus the time permissible on annual leave.

During the proposed period of travel the Isotopes Division will be adequately staffed. By July, action on the major new work items of the Isotopes Division will have been formulated or completed. Most of these work items should be ready for consideration at the Advisory Committee on Isotope Distribution meeting May 18 and 19, and action begun on the recommendations immediately thereafter.

F. R. Jones

Enclosures:

1. Travel order
2. Proposed Itinerary
3. Qualifications
4. Proposed visits

Jones:rmj

1063351

## Office Memorandum • UNITED STATES GOVERNMENT

TO : S. R. Sapirie, Manager  
Oak Ridge Operations Office

FROM : *R. W. Cook*  
R. W. Cook, Director of Production

DATE: APR 3 - 1953

SUBJECT: REQUEST FOR FOREIGN TRAVEL - DR. PAUL C. AEBERSOLD

SYMBOL: PPC:JEL

Reference is made to your memorandum of March 20, 1953, Symbol M:SRS, subject as above, with which you transmitted a request initiated by Dr. Aebersold for European travel this summer in connection with the Seventh International Congress of Radiology and visits to various European countries.

For your information and guidance we are attaching a copy of Mr. Boyer's memorandum of March 30, 1953 which we feel is self-explanatory.

Enclosure:

*OK*  
Copy ltr to Cook from Boyer, dtd 3/30/53 -  
Subj/above.

1063352

*Office Memorandum* • UNITED STATES GOVERNMENT

TO : R. W. Cook, Director of Production

DATE: March 30, 1953

FROM : M. W. Boyer, General Manager

SUBJECT: REQUEST FOR FOREIGN TRAVEL - Dr. Paul C. Aebersold

I have reviewed your memorandum of March 26 requesting foreign travel for Dr. Paul C. Aebersold. It is my recollection that approval has already been granted for Dr. George Manov, who is a member of Dr. Aebersold's organization. I am sure you are aware of the provision of the foreign travel bulletin (GM-T&T-5) covering foreign travel at AEC expense. You will recall that under the portion having to do with scientific meetings, it is Commission policy that "Managers of Operations will not submit foreign travel requests involving federal funds for more than one principal scientist or administrator from any specific department of a major laboratory in any one year unless special circumstances warrant it." It is quite possible that trips contemplated by Dr. Aebersold and Dr. Manov would not fall under this general classification. However, it seems to me that only under very unusual circumstances should we have two top men from a key operation making a trip to Europe in any one year.

I suggest that you ask Dr. Aebersold to proceed on the basis of a representative from the department making a European trip. I have no preference as to which member of the department makes the trip.

C O P Y

1063353

*Office Memorandum* • UNITED STATES GOVERNMENT

TO : S.R. Sapirie

DATE: March 6, 1953.

FROM :

Appreciating the considerations you and Walt Williams have concerning my proposed trip to Europe, I have spelled out in much more detail the purposes and justifications for the trip. Unfortunately this makes the memorandum much longer but it appears that a memo of this detail may be necessary. I recently talked to several people in the Divisions of Research and Biology and Medicine and they were not aware of any special sensitivity on the subject. It is true that the Division of Biology and Medicine has more people applying for the use of its funds for European travel than the Division cares to allot. However as long as we are not asking for the travel money from the Washington office, and the trip is not solely for attendance at the Congress, they saw no objection. When given the reasons connected with our Isotopes Division functions, they appeared to be ver much in favor of it.

The only item not covered in the attached memo is that of travel funds. As a matter mainly of concern to OROO I did not discuss it. I have gone over our travel budget and find that both Dr. Manov's and my trips can be taken and still provide for other immediately essential trips. By not asking for an advance on per diem expenses, most of the per diem expenses can be carried into a first quarter of FY '54. The trips do not start until the last of June. However the transportation tickets would have to be taken from travel funds for the last quarter of FY '53. I feel sure that arrangements can be worked out which will satisfy all the considerations.

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S. R. Sapirie

March 9, 1953

P.C. Aebersold

Just a few more remarks concerning my proposed European trip:

1. In our discussion Friday March 6 you went over my memo of that date on subject and did not specifically deny any of the points of the memo. You admitted that you would like to approve the trip, that my past trips have been of value to the Commission, that my overall direction and performance with respect to the isotopes program has been excellent and that if Dr. Manov were not going you would probably approve my trip.
2. You said however that Walt Williams had looked over a list of trips taken outside the continental limits of the U.S. by AEC and AEC contractor personnel and indicated that I had already had "quite a few". I don't know what this implies but I would like to know. Perhaps it implies that if Dr. Manov were not going, it would still be considered I have had "too many" outside trips. If this is based on security considerations, I want to know it. If instead it is based on value received to the Commission, I also want to know it. From all I can ascertain the Commission has had good value returned from my trips. The proposed trip should be no exception.
3. On frequency of trips outside the U.S. I don't think I would be far out of line with others of comparable background and responsibility. For example, I don't think I far exceed Dr. A. Hollaender, Dr. John Lawrence, Dr. Austin Bruce, Dr. John Z. Bowers, Dr. Shields Warren, Dr. G. Failla, and others. My background in atomic energy and radiobiology is at least of the same order as these persons and our program has as much international interest.
4. Your strongest point appeared to be that two people should not go from the same Division the same year. This point may be countered with:
  - a. Dr. Manov's and my trip do not overlap in purpose or in our training and responsibilities.
  - b. The Washington Division of Biology and Medicine is sending at least two, so also is the Biology Department of ORNL. These persons have no more background or responsibilities than I do.
  - c. This is a special circumstance that has not happened in the previous 7 years of the program and is not expected to happen again for many years.
5. The deadline for payment of registration fees for the Congress was January 1, so I registered (\$35) . My passport has been re-validated. I will send in a paper and exhibit whether I go or not. I will thus be ready to go should there be any change in feeling on the subject between now and the time of the Congress. Because of the difficulties of reservations however, a favorable action would be appreciated as early as possible.

1063355

OFFICE OF THE MANAGER  
ROUTING SLIP

FROM: \_\_\_\_\_

DATE: \_\_\_\_\_

TO:

Sapirie  
 Vanden Bulck  
 Lind  
 McCauley  
 Molesworth  
 Ould

Brown

Aebersold  
 Armstrong  
 Callaghan  
 Crosby  
 Groeniger

Alexander  
 Burch  
 Dillow  
 Maples  
 Piper  
 Young

Woodruff

Kasschau  
 MacKay  
 Moore  
 Trent  
 Managers File

Dunbar  
 Ford  
 Roberson  
 Wende  
 Williams

Paul:

I have just discussed this matter with Walt Williams. Walt happened to have in front of him at the time a summary report on the question of European travel, and was somewhat sensitive on this subject. I proposed to him that in fairness to you I would like to send your application for this trip to the General Manager for his consideration with the assistance of his technical staff. Walt discouraged me on this, indicating that it should not be sent to Washington unless I am in a position to strongly recommend it.



S. R. Sapirie  
2-27-53

Oak Ridge, Tennessee  
May 29, 1953

Mr. Neil J. Carothers, Jr.  
Deputy Director  
Division of Production  
Atomic Energy Commission  
Washington, D.C.

Dear Neil:

In our telephone discussion last week about my proposed European trip an inference was made which I feel needs answering in a personal manner.

You indicated that since you had made one trip to Eniwetok to see weapons tests you had refrained from going to the Nevada tests - even though a reasonable justification could be made on your Division's responsibilities. The inference was that the Production Division feels I might use more restraint in my requests for trips.

Please however consider these points:

(1) Attendance at professional meetings and presentation of papers and speeches related to isotopes is for our Division as much a business activity to further the isotopes program as is travel of Production Division personnel to further production programs. It is understandable that people other than scientists find it difficult to appreciate participation in scientific meetings - especially going to the same scientific meetings or Congress more than once. But scientific development takes place rapidly and this is part of the scientist's business of production - producing science - in our case, producing research, development and business in isotopes.

(2) In traveling to further the isotopes program our Division policy as well as my own is to be very selective, based on our judgment of direct relation to the isotopes program and benefit to it.

(a) We turn down scores of requests each year for speeches and travel related to our fields of training and the overall atomic energy program but not directly related to isotopes.

(b) Even on speeches and attendance at meetings related to isotopes we refer as much as possible these requests to local experts. We attempt to comply only with those requests where the participation calls for our special vantage point, our specifically designated functions, or our official representation.

(c) Specifically on weapons tests, although I went to Eniwetok and made radioactive fall out observations, I too, as you have done, have not asked to go to any Nevada tests. I might however make a

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May 29, 1953

reasonable justification in view of my previous responsibilities at the Almagordo test, likely future radiological activities in case of atomic war, and the fact that fall out from Nevada tests is affecting certain kinds of radioisotope utilization.

(3) Examination of the records of my trips during 7 years with the isotopes distribution program would show few trips without tangible results. The record shows:

(a) Presentation or publication of over 200 papers and speeches related to isotopes, most of which have been requested from high-level sources and for professional audiences.

(b) Professional listeners to my speeches have numbered in the tens of thousands.

(c) Professional readers of my articles may be estimated in the hundreds of thousands.

(d) Non-professional people who have heard me in audiences, on radio and on TV numbers in the tens of millions.

(e) No audience, publishing outlet or reader has indicated disappointment and our files contain hundreds of complimentary letters on these presentations.

(4) Not only has the Commission benefited in intangible ways from the numerous professional and non-professional relations indicated above but the rapid and steady growth in isotope utilization is tangible evidence. This growth would of course be a natural development without the considerable effort on my part, nevertheless while I have been administering the program it has grown from only a few dozen using departments or groups in 1946 to over 2800 today. The number of persons who have used isotopes or who have benefited from isotopes medically runs into the hundreds of thousands.

(5) Although some social pleasures are connected with travel and activities at meetings these are often part of achieving the overall purpose and in any case they do not interfere with or become the main purpose.

(6) Although travel has compensating features it also has many drawbacks, including increased risk to health and life and a monetary loss on essential travel expenses of over \$2000 in 7 years (one reason why I do not feel like using over \$1000 of my own money to go to the International Congress of Radiology).

In addition here are a few other points I believe should be considered:

(1) As long ago as the 1937 International Congress of Radiology I was co-investigator on three of the invited papers, two on biological effects

Mr. Neil J. Carothers

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May 29, 1953.

of neutrons with Dr. E.C. Lawrence and Dr. J. H. Lawrence and one with Dr. R. S. Stone on supervoltage x-ray (which I presented).

(2) This year marks 20 years for me in the fields of radiophysics and nuclear radiobiology and 22 years in nuclear physics.

(3) Few people going to Radiology Congress under AEC sponsorship can claim more ~~experience~~ in the radiology field.

(4) Other AEC or ~~AEC~~ contractor personnel have made more trips to Europe than one in 7 years.

(5) Other interested Divisions of the AEC are sending representatives but not the Research Division or Isotopes Division which have technical responsibility for the isotopes program. I had hoped attendance at the Congress would be on the technical side and that the Research Division would have been closer to the decisions.

(6) Each year my travel has resulted in loss of many hours of non-work time and I return unused many days of accrued leave.

(7) The isotopes program has been run in a business-like manner with steadily increasing efficiency in all respects, with large savings due to personal efforts, and presently with little cost to the taxpayer.

In conclusion it is possible that those who do not work closely with us do not appreciate the considered judgment and selection which we use in deciding on travel and attendance at meetings, that travel for us is a business activity essential in running an expanding, productive and publicly approved program, and that our travel and meeting activities show extensive tangible results. I sincerely believe that the memorandum of March 19, Jones to Sapirie, and the factors discussed above, justify my proposed European trip as part of my continuing activities in the interests of the isotopes program.

Very truly yours,

Paul C. Asbersold  
Director, Isotopes Division

1063359

DRAFT

Memo to: Nathan H. Woodruff, Assistant Manager for Operations      February 13, 1953.  
From: Paul C. Aebersold, Director, Isotopes Division  
Subject: ATTENDANCE AT SEVENTH INTERNATIONAL CONGRESS OF RADIOLOGY AND EUROPEAN VISITS  
SYMBOL: OI:PCA

This concerns certain factors regarding my proposed European trip which may or may not be appropriate to include in the memo to Washington. I appreciate the three main points you have raised, namely, time away from the office, travel funds, and duplication of effort. These as well as other comments that I feel have some bearing on the subject are discussed below:

1. Office absence. My permissible annual leave now amounts to 160 hours per year, or 4 work weeks. Examination of my leave record will show that I regularly do not use all my permissible annual leave. In fact, in 1950 when I went to Europe, I purposely refrained from using 196 hours or 24½ days, almost 5 work weeks. This partly compensated for the time taken by the trip.

My proposed trip this year calls for being away a total of approximately 30 work days. If I did not go on this trip I would probably take about 20 work days of annual leave. Normally in the same period I would be away on official travel for 10 days work or more. Consequently my office absence would not be greater than normal absence on other trips plus the time I could take on annual leave.

During the proposed period of travel the Division will be adequately staffed. Dr. Lough and Mr. Jones wish their annual leave at a later time. By July, action on the major new work items of the Division will have been formulated or completed. Most of these work items should be ready for consideration at the ACID meeting May 18 and 19, and action begun on the recommendations immediately thereafter.

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In summary of this point: The Commission will not lose any greater office absence than my leave and other trips would normally take; action will have been formulated or completed on our major new work items.

2. Travel funds. It is true that if Dr. Manov and I both take European trips, our travel funds for other trips will be reduced. Nevertheless that period of the year, because it is the major vacation period for academic institutions and even for an appreciable number of other institutions, is one of the lightest for field visits. It is possible that important activities may arise which would call for additional travel funds, but this would not be greatly in excess of our regular requirements.

3. Duplication of effort. Although Dr. Manov and I would be traveling in Europe at approximately the same time, it should be clear that the purposes of the two trips are independent and that there would be practically no duplication of effort. The primary justification for Dr. Manov's trip is to assist two international commissions in the establishment of the proper units and standards for widely used radioisotopes. His visits to Harwell and to a few of the major institutions using isotopes would be to discuss problems of standards, measurements and radiological safety practices. In the few cases where my visit would be to the same institution my discussions would be along different lines, namely, on developments in utilization, and on distribution procedures and controls. Dr. Manov's attendance at the Congress is only incidental to the fact that one of the Commission meetings is held in connection with it. Dr. Manov would attend only those sessions of the Congress pertinent to his functions.

Thus, although our trips may be simultaneous this is only by coincidence in relation of the two international commission meetings with the time of the Congress. We propose to avoid duplication of effort and to make efficient use of our time collecting different categories of information.

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4. Additional considerations. These further items I believe should be taken into consideration:

a. At this stage in the growing national and international use of radioisotopes, with my responsibilities and keen personal interest in planning and fostering the future of the isotopes program, I do not consider it excessive to make two trips to Europe in 7 years of the program. Some phases of isotope utilization, especially those in industry, are in probably the most rapid stages of growth. The British in particular have been quite active in promoting activities in such utilization. The British have sent several of the key people in their program to the U.S. at least twice since their isotopes program began.

b. Isotope distribution and utilization is still one of the major and most rapidly growing areas for international cooperation in atomic energy. The emphasis will rapidly change to reactors, but at the moment I feel that isotopes are a very active and appreciated area of cooperation. The reason for including the short visits to France, Sweden and Belgium is that Mr. John Hall was very enthusiastic about this being of value to the functions of the Office of Special Projects. He was also very enthusiastic in his endorsement of the proposed use of exhibits on peacetime programs of the Commission at International Congresses.

c. My background is that of a pioneer scientist in radiological physics and radiobiology and although I have given over 10 years largely to administrative work for the atomic energy program, I still wish to be considered as a scientist. Many of the administrative and even scientific people in Oak Ridge may not be aware of this background because they were not themselves in this field at the time. I would like to note therefore a few items that you might call to the attention of anyone who questions

the appropriateness of my attending the International Symposium on Radiobiology as well as the Radiological Congress. I was a key participant in the following:

- (1) First comparisons of biological effects of 200 kv x-rays, 1000 kv x-rays and neutrons.
- (2) Establishment of the differential effects of neutrons and the basis for neutron protection.
- (3) Establishment of the first tissue dose measurements for neutrons and units of measurement which have been in use up until rather recently.
- (4) Establishment of shielding data for fast neutrons which was useful in the calculations of shielding required for the first reactors.
- (5) Establishment of some of the original data on tissue dose with radioisotopes.
- (6) Some of the first measurements to be made of tissue dose and depth dose for million volt x-rays.

I am author or co-author of a considerable number of publications in both the radiological and radiobiological fields. A list of publications as well as some reprints are attached for your reference.

Because of my early activities in these fields I was invited to present a paper at the First International Congress of Radiology to be held in this country. That was 16 years ago. Although in recent years I have not actively participated in laboratory research, I still attempt to keep up with developments in these fields and feel that my participation in discussions with scientists at meetings and congresses still has a two way value.

d. The Isotopes Division has a record of avoiding extravagances. We have been very active in reducing expenses and subsidies in our program, both within AEC facilities and outside. Although we still have some subsidies they are minimal and I believe some should be continued in the interests of scientific and technical development. On one item alone, namely administration of the isotopes for cancer fund, we will have reduced expenditures this year by at least \$200,000. This saving was pushed through with a great deal of my personal effort against much resistance from several quarters. I do not have a record of recommending unessential or extravagant expenditures.

F. H. Johnson, Director, Division of Research,  
Washington

March 6, 1953

S. R. Sapiro, Manager, Oak Ridge Operations

FOREIGN TRAVEL FOR DR. GEORGE G. MANOV

SECRET: GPO:OON

The Isotopes Division has received a formal request from the International Commission on Radiological Units of the International Commission on Radiology inviting Dr. George G. Manov, Chief of the Advisory Field Service Branch, to present a report and discussion on the standardization of radiisotopes used in medicine. This unclassified report would be presented during the week of July 12, 1953, in Copenhagen, Denmark, before the 7th International Congress of Radiology.

The invitation to Dr. Manov is in line with his previous experience at the National Bureau of Standards and with his present duties, since 1948, of assisting domestic, off-Commission users of radiisotopes with problems involving health-safety including standardization of measurements. His 1948-49 field survey of techniques used by hospitals throughout the United States for accepting dosage of radiisotopes administered to patients was followed by the preparation and distribution of the NBS Standard Sample of Iodine-131 and Phosphorus-32. These eliminated discrepancies of 60% that existed in 1947-48 in the analysis of the same sample of Iodine-131 by different hospitals. Periodic visits to approximately 500 institutions by Dr. Manov and his staff since 1949 and close cooperation with the Bureau of Standards have insured satisfactory uniformity in the analysis of radiisotopes of various kinds used in industry as well as in medicine.

It would appear that the situation in Europe with respect to the medical use of radiisotopes approximates that in this country in 1948-49. Dr. L. S. Taylor, Secretary for the International Commission, has outlined to Dr. Manov the type of information desired for presentation. A copy of Dr. Taylor's letter is enclosed.

The Isotopes Division has also received a letter from Professor F. A. Paneth of the University of Sussex, England, inviting Dr. Manov to become an Advisory Councillor to the Joint Commission on Radioactivity of the International Council of Scientific Unions. He has also been invited to present a report on the status of the standardization of radiisotopes at the meeting of the Joint Commission in Stockholm, Sweden, during the week of July 22. A copy of Professor Paneth's letter is enclosed.

1063365

March 8/6, 1953

This unclassified report has been prepared by Dr. Manov in his capacity as Chairman of the Subcommittee on Isotopes and Gamma Ray Measurements and Standards of the Committee on Nuclear Science, National Research Council, and its proposed presentation at the Stockholm meeting has been approved by the National Research Council.

Drs. L. S. Taylor and Robley D. Evans, American members of these two commissions have suggested that it would be helpful if Dr. Manov could also visit the National Physical Laboratory, the Royal Cancer Hospital and possibly the Harwell Laboratory to discuss the standardization of radioisotopes. These discussions would also be unclassified.

The proposed trip would involve absence from the United States for a period of approximately five weeks, exclusive of travel time. A tentative itinerary is attached.

It is recommended that travel for Dr. Manov for the above-named purposes be approved.

**Attachments**

1. Copy. Ltr. fr. Dr. L. S. Taylor, 12/7/52
2. Copy. Ltr. fr. Prof. F. A. Jenoch, 1/16/53
3. Copy. Ltr. fr. PCA to LSC, 1/9/53
4. Proposed Itinerary
5. "Professional Qualifications"

CC: John C. Dagher, AEC, Washington  
R. W. Cook, AEC, Washington

Manov:ebg

Isotopes Division

2/ 1/53

1063366

*Not sent*

R. W. Cook, Director, Production Division,  
Washington

February 4, 1953

S. R. Sapirie, Manager, Oak Ridge Operations

**FOREIGN TRAVEL FOR DR. GEORGE G. MANOV**

The Isotopes Division has received a formal request from the International Commission on Radiological Units of the International Commission on Radiology inviting Dr. George G. Manov, Chief of the Advisory Field Service Branch, to present a report and discussion on the standardization of radioisotopes used in medicine. This unclassified report would be presented during the week of July 12, 1953, in Copenhagen, Denmark, before the 7th International Congress of Radiology.

The invitation to Dr. Manov is in line with his previous experience at the National Bureau of Standards and with his present duties, since 1949, of assisting domestic, off-Commission users of radioisotopes with problems involving health-safety including standardization of measurements. His 1947-48 field survey of techniques used by hospitals throughout the United States for assaying dosages of radioisotopes administered to patients was followed by the preparation and certification of the NBS Standard Samples of Iodine-131 and Phosphorus 32. These eliminated discrepancies of 600% that existed in 1947-48 in the analysis of the same sample of Iodine-131 by different hospitals. Periodic visits to approximately 800 institutions by Dr. Manov and his staff since 1949 and close cooperation with the Bureau of Standards have insured satisfactory uniformity in the analysis of radioisotopes of various kinds used in industry as well as in medicine.

It would appear that the situation in Europe with respect to the medical use of radioisotopes approximates that in this country in 1948-49. Dr. L. S. Taylor Secretary for the International Commission, has outlined to Dr. Manov the type of information desired for presentation. A copy of Dr. Taylor's letter is enclosed.

The Isotopes Division has also received a letter from Professor F. A. Paneth of the University of Durham, England, inviting Dr. Manov to become an Advisory Councillor to the Joint Commission on Radioactivity of the International Council of Scientific Unions. He has also been invited to present a report on the status of the standardization of radioisotopes at the meeting of the Joint Commission in Stockholm, Sweden, during the week of July 29. A copy of Professor Paneth's letter is enclosed.

1063367

T. E. Johnson

-2-

February 13, 1953

This unclassified report has been prepared by Dr. Manov in his capacity as Chairman of the Subcommittee on Beta and Gamma Ray Measurements and Standards of the Committee on Nuclear Science, National Research Council, and the proposed presentation at the Stockholm meeting has been approved by the National Research Council.

Dr. L. S. Taylor and Ashley D. Evans, American members of these two commissions have suggested that it would be helpful if Dr. Manov could also visit the National Physical Laboratory, the Royal Cancer Hospital and possibly the Harwell Laboratory to discuss the standardization of radioscopes. These discussions would also be unclassified.

The proposed trip would involve absence from the United States for a period of approximately five weeks, exclusive of travel time. A tentative itinerary is attached.

It is recommended that travel for Dr. Manov for the above-stated purposes be approved.

**Enclosures**

1. Special Order
2. Copy. Ltr. to Dr. L. S. Taylor, 12/22/52
3. Copy. Ltr. to FCA to LSC, 1/7/53
4. Copy. Ltr. to Prof. J. A. Farnth, 1/14/53
5. Proposed Itinerary
6. Professional Qualifications

CCs John S. Hughes, AEC, Washington  
L. W. Cook, AEC, Washington

Manov:ebg

Isotopes Division

2/ /53

1063368

PROPOSED ITINERARY  
for  
George G. Manov

(Travel to Europe by boat if permissible; other travel by air)

		<u>No. of Work Days</u>
July 6 - 14	Travel, Oak Ridge to Copenhagen	7
July 15-17	International Commission on Radiological Units	3
	Travel, Copenhagen to London	
July 20-24	Harwell Laboratory Middlesex Hospital Royal Cancer Hospital	5
	National Physical Laboratory Hammersmith Hospital	
July 27-31	Annual leave, if permissible; 5 work days	5
July 31	Travel, London to Stockholm	
August 3-5	Joint Commission on Radioactivity Nobel Institutes for Physics and Medicine	3
August 6-14	Travel, to Oak Ridge	7
	Total work days away from Oak Ridge	30
	Total elapsed days away from Oak Ridge	41

March 13, 1953

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