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4

FOREIGN INTELLIGENCE SUPLEMENTS NOS. 2 & 3

TO

MANHATTAN DISTRICT HISTORY

BOOK I - GENERAL

VOLUME 4 - INTELLIGENCE & SECURITY

UNCLASSIFIED

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ATOMIC ENERGY ACT 1946

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MANHATTAN DISTRICT HISTORY

BOOK I - GENERAL

VOLUME 14 - INTELLIGENCE AND SECURITY

FOREIGN INTELLIGENCE SUPPLEMENT NO. 2

(PEPPERMINT)

FOREIGN INTELLIGENCE SUPPLEMENT NO. 3

(EXPORT CONTROL)

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FOREIGN INTELLIGENCE SUPPLEMENT NO. 2

TO

MANHATTAN DISTRICT HISTORY

BOOK I - GENERAL

VOLUME 14 - INTELLIGENCE AND SECURITY

FOREWORD

This supplement presents an account of the action taken, in the United States and in Europe, with respect to the possibility of the use by the Germans of radioactive materials as a weapon; the whole subject was commonly referred to by the code word "Peppermint".

Although this supplement was written more than eight years after the events which it describes, it was drafted by the man who was principally concerned, Lt. Colonel (then Major) A. V. Peterson, CE, and was based on his personal recollections and on documents which existed or originated during the time the events occurred. The documents referred to in the text are listed in an appendix to this supplement.

31 July 1952

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FOREIGN INTELLIGENCE SUPPLEMENT NO. 2

TO

MANHATTAN DISTRICT HISTORY, BOOK I, VOL. 14

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TO

MANHATTAN DISTRICT HISTORY, BOOK I, VOL. 14

INTELLIGENCE AND SECURITY

1. Introduction.

a. During the years 1942 and 1943 the scientists of the Manhattan District expressed serious concern regarding the possibility of Germany's making rapid progress in nuclear developments for military purposes. That a nuclear weapon could constitute one of Germany's boasted secret weapons appeared plausible in view of the possibility that work on atomic energy had been started in Germany on a large scale prior to the entry of the United States into the war. Specific knowledge of the status of German scientific research was not obtained until the invasion of Germany was well underway. (See Foreign Intelligence Supplement No. 1 to this volume.) Early in the United States atomic energy program, therefore, it was felt to be imperative that action be taken to prevent the surprise use of nuclear weapons by the enemy and to establish some practicable measures for minimizing their effects if they were used.

b. It was appreciated that nuclear developments by the enemy might be directed toward either the production of atomic bombs or the production of radioactive materials to be used as contaminating agents, or both. Supplement No. 1 is concerned with the general investigation of nuclear developments in Germany, with particular emphasis on atomic bomb activities. This Supplement is concerned with the action taken regarding

the possible use by Germany of radioactive contaminants.

2. Preparations in the United States.

a. In the United States, from the time that the concept of the chain reaction foreshadowed the large-scale production of radioactive materials, it was recognized that radioactivity could be employed as a military weapon. Early consideration was given, by various scientists, to the contamination which could be effected by production reactors then envisaged and to the development of instruments for detecting and measuring radioactivity. When the Manhattan District assumed responsibility for the program, therefore, some work along these lines was in progress; but the military interest in radioactivity, particularly from the standpoint of defense against it, served to stimulate the effort.

b. A program was initiated, at a high priority, in the fall of 1942, for the development of instruments for field use. This program was undertaken principally by the Metallurgical Laboratory at Chicago and by the Victoreen Instrument Company at Cleveland. By the summer of 1943 a number of alarm, survey and location meters were developed and built by the Metallurgical Laboratory and were held available for use; also, 40 survey meters were developed and built by the Victoreen Instrument Company. Of these latter instruments, 24 had a range of 0 to 10 roentgens per day and 24 had a range of 0 to 200 roentgens per day. During the summer of 1943, under highest secrecy to prevent undue alarm, a set of instruments was located at each of the Manhattan District Offices in Boston, Chicago, New York, San Francisco and Washington, D. C., where,

in each case, the respective Area Engineer and a limited number of officers were instructed in their purpose and use. (App., Ref. No. 1.) In addition, a reserve supply of instruments was held in readiness in Chicago, and qualified scientists from the Metallurgical Laboratory and other laboratories were prepared to proceed to the scene of suspected radioactive attack, to assist in locating and measuring any activity present and in interpreting data. In setting up this program, it was intended that surveys would be made in the event of the bombing of any city in the United States or in the event that indications were received of large-scale blackening of films or of extraordinarily high background readings on scientific instruments.

c. It was fully understood that these steps were minimal. During 1942 and 1943, the possible use of radioactive materials by Germany was considered at several S-1 Committee meetings. During the Summer of 1943, a subcommittee of the S-1 Committee, headed by Dr. James B. Conant, evaluated the use of radioactive materials as a weapon. (App., Ref. No. 2.) The sub-committee concluded that while the use of radioactive materials by Germany appeared plausible, the use against the United States itself appeared remote. Nevertheless, the sub-committee concurred in taking reasonable steps, such as those outlined above, to be prepared to identify and act upon indications of the presence of radioactive materials in the United States.

3. Preparations in the United Kingdom.

a. Information available in December 1943 on the possible use of radioactive materials by the enemy indicated that while the use of

radioactive materials against the United Kingdom was possible, it was unlikely. On the other hand, it was felt that if the materials were employed the damage would be great, and that the possibility could not be ignored. It was believed that reasonable, simple precautions should be taken in the United Kingdom to prevent complete surprise in the event that radioactive materials were used by the enemy.

b. At the recommendation of General Groves, and with the concurrence of the Chief of Staff, General Marshall, in December 1943, four officers on temporary duty in the United States, from the European Theater of Operations' staff in the United Kingdom, were briefed on the use of radioactive materials as a military weapon. The briefing was conducted by Major A. V. Peterson at Chicago, Illinois, under most complete secrecy, and included the use of the materials, the probability of their use, the effects, symptoms and treatment, and the known defense measures. (App., Ref. No. 3.) The officers were instructed to report the nature of the problems to the Commanding General of the American Forces in the United Kingdom. (App., Ref. No. 4.) As a means of preventing complete surprise in the event the materials were used against installations in the United Kingdom, the officers were requested to recommend that the Signal Officer, the Air Officer, and the Medical Officer report any peculiar or unexplained effects on film or personnel of which they might become aware. Also, each of the four officers was given a set of radiation instruments, for the purpose of conducting surveys for location and intensity of radiation in case the use or suspected use of radioactive materials were reported. The four officers were:

Colonel P. H. Timothy, Chief, Engineer Section, FUSAG (First U. S. Army Group)

Colonel E. S. Graver, Executive Officer, Ordnance Section, ETOUSA (European Theater of Operations, U. S. Army)

Colonel E. T. Fell, Chief, Claims Commission, ETOUSA

Captain M. J. Hedlinger, G-3 Section, FUSAG.

The subject was brought to the attention of General J. L. Devers, Commanding General, European Theater of Operations, U. S. Army, and the following members of his staff, in December 1943:

General D. Barr, Chief of Staff, ETOUSA

General P. R. Hawley, Chief Surgeon, ETOUSA

General E. L. Sibert, Assistant Chief of Staff, G-2, ETOUSA

Colonel J. W. Castles, Deputy Assistant Chief of Staff, G-2, ETOUSA

Colonel W. W. Jervey, Director, Army Pictorial Service, SOS, ETOUSA

also, Colonel C. E. Conred, who later became Assistant Chief of Staff, G-2, ETOUSA, was given information on the subject.

c. The immediate action taken at Headquarters, European Theater of Operations, was as follows:

(1) A memorandum was dispatched from the office of the Chief Surgeon, ETO, to all U. S. commands requesting reports of certain specified symptoms related to an "epidemic disease of unknown etiology". (App., Ref. No. 5.)

(2) A memorandum was dispatched from the office of the Chief Signal Officer to all agencies and commands of the Army Pictorial Service

requesting reports of unexplained fogging of film. (App., Ref. No. 6.)

(3) It was arranged that reports of use or suspected use of radioactive materials would be given by any of the above-mentioned officers to the four officers equipped with instruments so that surveys could be undertaken at once.

(4) A central file on the subject was kept by the Secretary of the Chief of Staff, ETOUSA, for access only by certain specified officers.

d. Early replies to the inquiry concerning fogged film did not point to any suspected action on the part of the enemy and it was not known whether symptoms of any "unusual epidemic disease" were ever reported. After a number of surveys of newly bombed areas were made without result, it was agreed at Headquarters, ETO, that surveys would be made only in the event that the use of radioactive materials was more positively indicated or suspected. (App., Ref. No. 7.)

e. In March 1944, General Groves felt that the subject in question should be brought to the attention of the Commanding General, SHAEF (Supreme Headquarters Allied Expeditionary Force), to prevent surprise and confusion in the event that radioactive materials were used by the enemy during the invasion. At this time General Groves submitted a memorandum to the Chief of Staff on the possible use of radioactive material by the Germans and recommended that General Eisenhower be informed of the situation.

f. With the concurrence of General Marshall, Major A. V. Peterson was sent to the United Kingdom in April 1944, to inform

General Eisenhower of the developments. (App., Ref. No. 8.) On 8 April 1944, Major Peterson reported to General Eisenhower and briefed him and the following members of his staff on the possible employment of radioactive materials by the enemy during the impending invasion:

Lt. General W. B. Smith, Chief of Staff, SHAEF

General J. F. M. Whiteley (British), Assistant Chief of Staff, G-2, SHAEF

Maj. General H. R. Bull, Assistant Chief of Staff, G-3, SHAEF.

5. The preparation of a combined American-British plan was considered, but General Whiteley felt that the British could take no action until the question had been more thoroughly evaluated. Pending a decision by the British, the Supreme Headquarters requested ETOUSA to prepare a plan of operation for the American Forces. The responsibility for its preparation was delegated to Colonel G. S. Eyster, Assistant Chief of Staff, G-3, ETOUSA. A plan under the code name "Peppermint" was prepared, calling for the following general action to be taken in the United Kingdom (App., Ref. No. 9):

(1) Centralization of all detection equipment and detailed knowledge of the nature of the problems in Headquarters, ETOUSA.

(2) Establishment of a means for the initial detection and implementation of the project.

(3) Establishment of effective channels for the prompt report of its implementation to G-3, ETOUSA, for further action by that Headquarters.

The plan also provided for briefing specified staff officers of the senior commands in the European Theater without delay and for briefing certain staff officers of the Corps and divisions of the First U. S. Army (FUSA). The senior commands involved were: European Theater of Operations, U. S. Army (ETOUSA); First U. S. Army Group (FUSAG); First U. S. Army (FUSA); Third U. S. Army (TUSA); U. S. Strategic and Tactical Air Force (USSTAF); IX Air Force; Southern Base Section; Commander U. S. Naval Forces in Europe (COMNAVEU); and Task Force 122, U. S. Navy. At this time also, paralleling actions which had been taken in December 1943 and January 1944, memoranda were sent to the major commands requesting reports of unexplained blackening of photographic film and certain specific clinical symptoms and medical cases. (App., Ref. No. 10.)

h. Subsequently, the British decided to follow a plan similar to the American plan, but recommended that detailed briefings remain with the highest headquarters. SHAEF agreed with this recommendation and the ETOUSA plan was revised accordingly. (App., Ref. No. 11.) The overall plan, therefore, called for individual action by the American and British forces, with coordination, if necessary, by SHAEF.

i. The final plan for the American forces, Operation "Peppermint", provided for (App., Ref. No. 12):

(1) Briefing specified officers of Headquarters of: European Theater of Operations, U. S. Army (ETOUSA); Commander US Naval Forces in Europe (COMNAVEU); and U. S. Strategic and Tactical Air Force (USSTAF).

(2) Charging the Assistant Chief of Staff, G-3, ETOUSA, with General Staff coordination and supervision of "Peppermint".

(3) Charging the Chemical Warfare Service officer, ETOUSA, with the operation of detecting equipment incidental to "Peppermint", and centralizing all such equipment under his control; also, charging him with close coordination with the Chief Surgeon, ETOUSA.

(4) Charging the Chief Surgeon, ETOUSA, with reporting indications of employment of "Peppermint" as evidenced by clinical symptoms and blackening of film; also, charging him with treatment of clinical cases and advising on hazards and protective measures.

(5) Charging the Chief Signal Officer, ETOUSA, with reporting evidence of unexplained fogging or blackening of film and with the repair and maintenance of special detecting instruments and equipment.

(6) Prompt reporting by the fastest means available of indications of the employment of "Peppermint" to the Commanding General, Headquarters, ETOUSA, attention of Assistant Chief of Staff, G-3, by reference to the code name.

3. Detailed plans were made for surveying critical areas upon receipt of reports of the suspected use of radioactive materials by the enemy and for taking action for the treatment and protection of personnel. Detailed plans were made as well for notifying General Groves, for the dispatch of trained technical personnel and additional instruments held in readiness in the United States. In addition, it was contemplated that, when the employment of radioactive materials was known to have occurred, the cooperation of the Cavendish Laboratories at Cambridge University would be obtained in helping to identify the specific types of material used.

k. The equipment and supplies taken to the European Theater consisted of 1500 film packets, 11 survey meters, and one Geiger counter, as well as a calibrating source and a number of spare parts. Personnel in the offices of the Theater Chemical and Signal Officers were instructed in the use, care and maintenance of this equipment. Equipment held in the United States ready for shipment to the Commanding General, European Theater of Operations, with highest air priority, consisted of 1500 film packets, 25 survey meters and 5 Geiger counters. Also, the completion of 200 more survey meters and 25 more Geiger counters was expected during May 1944.

l. Dry runs of Operation "Peppermint" were made by Headquarters, Chemical Warfare Service, ETOUSA, immediately prior to the invasion of Normandy, in order to test the plan and the functioning of the equipment, as well as to give experience to the operating personnel. Aerial and ground surveys were made of bombed areas along the coast of England and at troop and supply concentration centers.

m. No evidence was found of the use of radioactive materials by the Germans, so that it was never necessary to put the operation into effect. After the cessation of hostilities, the equipment and the highly classified documents relating to Operation "Peppermint" were collected and placed in the custody of the Manhattan Project.

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APPENDIX - REFERENCES
(All referenced documents located in the Manhattan District files.)

1. Appendix IV (A. V. Peterson) of a report entitled "Radioactive Material as a Military Weapon", prepared under direction of A. H. Compton.

2. Report entitled "Radioactive Material as a Military Weapon", prepared under direction of A. H. Compton, written expressly for the sub-committee of the S-1 Committee headed by Dr. J. B. Conant.

3. Manual on Use of Radioactive Materials in Warfare, dated 16 December 1943, prepared for the use of the four officers in the U. K.

4. Letter from Acting Chief of Staff to Lt. General J. L. Devers (copy unintsd), advising re: special duties assigned to four officers.

5. Letter, Office of Chief Surgeon, 29 December 1943, to: Surgeon, First Army; Surgeon, Eighth Air Force; Surgeon, Ninth Air Force; Surgeons, All Base Sections; Commanding Officers, All Hospitals; Subject: Report of Epidemic Diseases.

6. Memorandum from Office of Chief Signal Officer, ETOUSA, dated 7 January 1944, to all Signal Corps photographic agencies to report immediately cases of unexplained fogging of photographic film.

7. Memorandum from Major Harry S. Traynor, CE, to Maj. General L. R. Groves, dated 11 April 1944, reporting on instruments.

8. Memorandum from Major A. V. Peterson, CE, to Maj. General L. R. Groves, dated 18 May 1944, subject: "Operation 'Peppermint'", containing detailed account of Major Peterson's assignment in the European Theater.

9. Attachment IV to Reference No. 8 (see above).

10. Administrative Memoranda Nos. 58 and 60, dated 3 May 1944, from Office of the Chief Surgeon, ETO, to: Surgeon, FUSAG; Surgeons, FUSA and TUSA; Surgeon, USSTAF; Surgeons, All Base Sections; Commanding Officers, All Hospitals. Also, memorandum, dated 27 April 1944, from Director, Army Pictorial Division, to all agencies of the Army Pictorial Service.

11. Attachments X, XI, and XII, to Reference No. 8 (see above).

12. Memorandum, dated 8 May 1944, subject: Signal Corps Plan for Operation "Peppermint", from Chief Signal Officer, ETO, to the Commanding General, ETO, Attention G-3. Also, memorandum, dated 15 May 1944, subject: Operational Plan for Implementation of Peppermint, from the Chief Chemical Officer to the Deputy Theater Commander, Attention AC/S, G-3.

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FOREWORD

This supplement presents a brief account of the export control activities of the Manhattan District, principally during the period between the announcement of the development of the atomic bomb, in August 1945, and the transfer of these activities to the Atomic Energy Commission, at midnight on 31 December 1946.

The supplement was written nearly three years after the end of the period with which it is concerned, but it was drafted by Mr. Alton P. Donnell, assisted by Mr. Lyall E. Johnson, both of whom had been closely concerned with the activities described. Both had served as Army Majors with the Manhattan District and Major Donnell had served as the head of the District's export control activities.

The detailed information was confirmed by reference to documentary material of an earlier date, a memorandum to the Atomic Energy Commission, dated 18 December 1946, prepared for Major General L. R. Groves by Major Donnell.

November 1949

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EXPORT CONTROL ACTIVITIES

1. Introduction.

After the dropping of the two atomic bombs on Japan in August 1945, and after the cessation of hostilities which followed, it was a necessary objective of the intelligence role of the Manhattan District to keep abreast of the activities of other countries in the atomic energy field and to determine the trend of their efforts. Watching closely the inquiries on, and the purchases of, material and equipment by foreign countries, from United States manufacturers and suppliers, was a logical phase of this effort. This activity, had been carried on during the war and it expanded greatly in importance when the news of the United States development of the atomic bomb was released. Thus, the export control activities of the Manhattan District began as an intelligence function but developed, as brought out later in this supplement, into an actual control as the situations dictated.

For a few months following the war, the intelligence work was done primarily by the Manhattan District security officers, on instructions from the Washington office. They were aided greatly by the voluntary action of the Project contractors, who were well aware of the concern of the Manhattan District security officers with any foreign

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interests. This form of liaison, a direct contact between the Project representatives and the manufacturers who had been working on some phase of the development of the atomic bomb, was very effective; but, with the cessation of hostilities and the termination of the many contracts, the close contact was no longer maintained and it became apparent that the Manhattan District must take the initiative in maintaining the former liaison and in establishing new liaison with other companies who were capable of supplying similar critical materials. Accordingly, early in 1946, one officer, Lt. George A. Rugg, was assigned the responsibility for this effort, as a member of the Washington Intelligence Office. In the fall of that year, upon the return of Lt. Rugg to civilian status, Major Alton P. Donnell was assigned this responsibility. These officers were free to call on the other Security and Intelligence personnel as might be necessary.

2. Continuation and Development of Liaison.

The immediate work in continuing the Manhattan District policies can be broken down into four important phases. One was the formalization of the liaison with manufacturers and the establishment of channels for its continuation. The second was the extension of the liaison to afford a complete coverage of any critical industry, whether or not any company in such an industry had previously been in contact with the Manhattan District. The third phase was the establishment of a liaison with various Government agencies that could be helpful, again an extension of previous Manhattan District activity. The fourth phase required a thorough study of the technical aspects of all phases of the Manhattan District work to

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assure that all critical items were included under the liaison system.

a. First Phase.

The first phase required the setting up of a formal contact with a number of Manhattan District contractors, for the purpose of formalizing the liaison and establishing channels for its continuation. These contractors could be grouped in several categories, a few of which may be cited as examples.

One important group included such large electrical equipment manufacturers as Westinghouse, Allis-Chalmers and General Electric. Each of these companies had performed an important phase of the work and, in addition, had worked on a number of smaller, but critical, phases and were well qualified to detect unusual inquiries. In line with the request of the Manhattan District, they established a system within their respective organizations to clear, in each case through an officer of the company who was well-informed on atomic energy work, any orders or inquiries even remotely connected with the type of work they had done. These officers, in turn, reported any suspicious incidents to the Manhattan District. Also, with the knowledge of the parent company, the Manhattan District established a liaison directly with the respective subsidiary export companies.

There were other groups of manufacturers who had worked on limited phases of the project or supplied critical equipment, such as the companies in the field of high-vacuum equipment and engineering. These included Kinney Mfg. Co., National Research Corp., Distillation Products, Inc., Beach Russ Co., and F. J. Stokes Machine Co.

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Another example may be found in the radiation instrument field. Many firms in this field had done work for the Manhattan District or had been formed since the war by "alumni" of the Manhattan District. Other examples are: International Nickel Co., which had worked on and supplied material for the gaseous diffusion barrier; the companies capable of the production of high-purity graphite; three companies in the beryllium processing field; companies producing, or capable of producing, critical chemicals such as hydrofluoric acid or fluorine; and companies in the high-quality insulator field, such as Coors Porcelain Co. and the Lapp Insulator Co.

A responsible officer was contacted in each of these companies, as well as companies in other fields not named, and, in every case, the companies agreed to screen their orders and keep the Manhattan District fully informed.

b. Second Phase.

The second phase of the work of continuing the Manhattan District policies was to make a complete coverage of the fields which have been mentioned and of other critical fields as well. In practically every case, there were suppliers who were capable of meeting the Manhattan District specifications but had not participated in the work. To make the coverage as complete as possible, lists of these companies were prepared, and an officer of each company was contacted personally. Thus, a liaison was established to channel all information on foreign orders or inquiries, which might in any way be related to atomic energy work, into the Manhattan District. The radiation instrument field is

an example. There were twenty-five or thirty small companies in this business and probably not more than one-half of them were associated with the Manhattan District.

c. Third Phase.

The third phase, maintaining liaison with Government agencies, was equally important, as several Government agencies customarily received direct information on foreign orders and inquiries or passed on the exports. Many companies obtained the approval of the State Department, in case there was any question from a political or security standpoint, before accepting foreign business. Arrangements were made with the group in the State Department who handled such requests, to refer inquiries on certain categories of interest to the Manhattan District for comment before answering the questions raised. Arrangements were also made with the export licensing group in the Department of State for the Manhattan District to screen license applications on helium, a material which, though not critical, had a wide and important application in various phases of the project. (A second check on helium was provided through the Bureau of Mines, Department of Interior, which produced the domestic supply of helium and was generally informed of all foreign and domestic orders.) Effective liaison was also maintained with the Office of International Trade, U. S. Department of Commerce. This office had authority and responsibility for the issuance of export licenses on a wide range of commodities and had a fairly comprehensive authority for requiring export licenses for the materials and equipment which the Manhattan

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District wished screened. Also, the Office of International Trade had a working arrangement with the Bureau of Customs, and with the customs officials at all important ports, who were alerted and served as important sources of information. Originally, the Manhattan District liaison with Customs was conducted through the Office of International Trade, but later the liaison was maintained directly with several Customs offices.

d. Fourth Phase.

The fourth phase of the work involved a definitive study of the items of material and equipment which were critical to atomic energy work. The original list which was used as the basis for the establishment of the various liaisons mentioned above had been compiled in the Intelligence offices of the Manhattan District. It proved to be a very complete and satisfactory list, its only fault being that it included some items for which a control was not warranted. All items on the list were checked again for their criticality, by discussions with the Manhattan District area engineers and important contractors, and by studies of the termination reports and other literature relating to various phases of the project. Also, the list was considered from a different angle: the possible effectiveness of watching or regulating the flow of a particular material from the United States. This entailed a consideration of the abundance of material in other countries, the extent of the dissemination of technical "know-how", and the capability of other countries to manufacture or process. The list developed in this work was turned over to the Atomic Energy Commission and later served as a basis for the Commission's control program.

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3. Status as of 31 December 1946.

The status of the export control activity of the Manhattan District as of 31 December 1946 was as described below.

a. Materials

(1) Materials under formal control through the Office of International Trade, U. S. Department of Commerce, were:

(a) Uranium

(b) Thorium

(c) Actinium bearing salts and compounds

(d) Chemicals containing artifical radioactive isotopes

(e) Radon

(f) Radium

(g) Polonium

(h) Beryllium

(i) Gallium

(j) Monazite sands

(k) Bismuth

(l) Cadmium

(2) Material under formal control of the Department of State was:

Helium

(3) Materials under informal control through liaison with industry were:

(a) Diffusion pump oils

(b) Fluorocarbons

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(c) Heavy water

(d) High purity graphite

(e) Hydro-fluoric acid

(f) Nickel-plated pipe

(g) Nickel powder

(h) Tantalum

(i) Tungsten

(j) Tungsten carbide

(k) Vacuum distilled calcium

(4) Materials under consideration for informal control were:

(a) Barium nitrate

(b) Boron and boron steel

(c) Lanthanum salts

(d) Liquid nitrogen

(e) Lithium borohydride and lithium diborone

(f) Sodium, potassium or Na-K alloy

(g) Nickel-clad and monel metals

(h) Magnesium, high purity

b. Equipment

(1) Equipment being placed under formal control by Office of International Trade, U. S. Department of Commerce, was:

Vacuum metal melting furnaces

(2) Under consideration for formal control through Office of International Trade, U. S. Department of Commerce, were:

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(a) Vacuum diffusion pumps

(b) Leak detectors

(c) Radiation detection equipment

(d) Mass spectrometers

(3) Producers of the equipment listed below had been contacted and had agreed to furnish information on foreign inquiries received by them. The cooperation by the companies concerned was excellent and some foreign orders were not filled when the Manhattan District so requested. Through this system of liaison it was known that a rather large number of small diffusion pumps and some radiation detective equipment was exported, but the situation was such that the District deemed it inadvisable to request refusal of these orders.

(a) Beckman amplifiers

(b) Cable (special x-ray type)

(c) Differential pressure transmitters

(d) Diffusion pumps

(e) High vacuum gauges (Nelson, Pirani and ion gauges)

(f) Lapp water coils

(g) Mass spectrometers, including leak detectors and line recorders.

(h) Radiation detection equipment

(i) Rectifier transformers

(j) Special insulators

(k) Special process valves

(l) Special vacuum tubes

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(m) Temperature regulating instruments

(n) Vacuum metal melting furnaces

(o) Vacuum valves

(4) The following items were under consideration for informal control through liaison with industry:

(a) Stage pumps for process gas (K-25)

(b) Reciprocating pumps for process gas (K-25)

(c) Magnetic control valves

(d) Coolant pumps

(e) Aluminum welding equipment

(f) Boron spraying equipment

(g) Metal bellows

(h) Milliammeters, large, DC

(i) Motor generator sets (above 1500 KW, DC)

(j) Fluorine plants

(k) Special process valves (K-25)

4. Transfer to Atomic Energy Commission.

The export control program of the Manhattan District was dependent almost entirely upon the complete cooperation of the companies concerned. The extent of cooperation obtained was checked by liaison with the Government agencies, particularly the Office of International Trade and the Bureau of Customs. From these checks and certain intelligence data, it appeared that the cooperation was almost 100% complete and that the majority of the companies were unselfish in carrying out the desires of the Manhattan District along these lines.

There were, however, two strong indications that the system could not continue to be effective over a long period of time. For one thing, the Manhattan District was placed in the position of asking a company to give up rather lucrative business without being able to guarantee that this same business might not be accepted by an American competitor. Secondly, there was an indication that a very small number of companies in one or two of the fields was either accepting or planning to accept foreign business against the wishes of the Manhattan District. Obviously more positive action would be necessary since the system would not operate if there were any defections. By the time that such cases had begun to assume any importance, the Atomic Energy Act of 1946 had been passed and the Atomic Energy Commission had been appointed. The Act gave authority to the Commission to deal with such cases. During the interim, the only course open for the Manhattan District was to make full use of the prestige of the Government and to enlist the cooperation of the Office of International Trade with their export control authority.

Toward the end of 1946, in preparation for the assumption of the responsibility by the Commission, the control work was separated from the Manhattan District's Intelligence Office, which was subsequently transferred to the Central Intelligence Agency. A report was prepared on the Manhattan District export control activities, for the information and guidance of the Commission personnel. The Manhattan District turned over to the Atomic Energy Commission an extensive liaison control system over items of equipment and material critical in atomic energy work and

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a limited positive control system which made use of the authority of the Office of International Trade.

(The work was continued by the Commission in essentially the same form until late in 1947, when a Commission export control regulation was issued.)

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