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October 17, 1949

AEC 180/1

COPY NO. 40

ATOMIC ENERGY COMMISSION

REPORTING OF THE HANDLING OF RADIOACTIVE WASTE MATERIALS IN
THE UNITED STATES ATOMIC ENERGY PROGRAM

Note by the Secretary

1. The attached report by the Director, Public and Technical Information Service is circulated for Commission consideration during the week of October 17, 1949.

2. It should be noted that the proposed report "The Handling of Radioactive Waste Materials in the U. S. Atomic Energy Program" is being circulated as AEC 180/2.

ROY B. SNAPP
Secretary

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1
2 - 6
7
8
9, 10
11-16
17, 18
19-28
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ATOMIC ENERGY COMMISSION

REPORTING OF THE HANDLING OF RADIOACTIVE WASTE MATERIALS IN
THE UNITED STATES ATOMIC ENERGY PROGRAM

Report by the Director of Public and Technical
Information Service

THE PROBLEM

1. To approve issuance of a public report on handling of radioactive waste materials in the United States atomic energy program.

BACKGROUND

2. At Meeting 185, July 15, 1948, the Commission rejected for inclusion in the Fourth Semiannual Report to the Congress a draft chapter on the handling of radioactive wastes, with the understanding that a special unclassified report on the subject would be prepared for later issuance. In discussion at Meeting 209, October 20, 1948, and at subsequent meetings, the Commission suggested a report in two parts, the first popular and generally explanatory, the second technical, more detailed, and useful to professional men who might be called upon to deal with hazards rising from the handling of radioactive wastes.

3. As is summarized in detail in a memorandum of October 13, 1949,* to the General Manager, there was difficulty, extending over a period of months, in reaching agreement on the content of an unclassified general report, and also, more particularly, of an unclassified technical section of a report; also staff consideration has evolved the view that instead of a single technical report, there should be a series of technical reports and hand-

*On file in Public and Technical Information Service.

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books, some classified for use within the atomic energy project and some unclassified, for the use of technical men not in the project.

4. At its meeting of July 7, 1949, the Program Council considered the problem, and recommended that a new draft for the general public report be prepared, and that a program for servicing professional men inside and outside the atomic energy program with precise information in the field be developed by the Public and Technical Information Service in cooperation with the program divisions.

5. The recommendation of the Program Council was followed and the outline of the program for detailed technical reporting is in Appendix "A".

6. The proposed public report was reviewed by the Military Liaison Committee, and under date of August 30, the Committee, through its Executive Secretary, directed a letter (Appendix "C") to the Public and Technical Information Service objecting to publication of the report as an unclassified document.

DISCUSSION

7. The draft report as presented in AEC 180/2 carries the facts on the subject agreed upon by the program divisions and the offices of operations as appropriate for publication in an unclassified report for the general reader. It conforms to the general direction of the Commission that a report be prepared giving the basic facts to the general public. The plan for development of a continuing system of circulating technical information on the subject among professional men inside and out-

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side the program is believed to offer the best way of meeting the needs of this important group.

8. The objection of the Military Liaison Committee to unclassified publication of the draft report would of course defeat the purpose of providing declassifiable information in this field to the general public. It is agreed by the staff of the AEC that the information contained in the draft report is declassifiable, save for a few details pointed out by the MLC which have been eliminated, as noted in the draft letter of reply (Appendix "B").

9. The attitude expressed by the Executive Secretary on behalf of the MLC on this matter is identical with the attitude expressed earlier regarding publication of material contained in the Sixth Semiannual Report to Congress, and set forth in general terms applying to the whole field of public reporting in a letter of July 15, 1949, (AEC 229/1) inviting a review of the subject at staff level and later between the Committee and the Commission membership. Representatives of the Commission staff, as instructed, met with the MLC staff representatives in late July. The preparation of an outline for discussion of the whole matter of principle now waits upon action by the MLC staff. Meantime, it seems that as in the case of MLC representations of the publication of the Sixth Semiannual Report, the general objection is not vigorously pressed, since specific objections also are stated. As in the case of the Sixth Report, it is believed that publication should proceed, following response to the specific objections of the MLC.

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~~Appendices "B" and "C"~~
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STAFF JUDGMENTS

10. The Divisions of Military Application, Production, Reactor Development, Biology and Medicine, Research, and Security, the Declassification Branch, and the Offices of Oak Ridge and Hanford Operations have approved the draft report for public issuance. The General Counsel finds no legal objection to issuance.

CONCLUSION

11. The draft report on "The Handling of Radioactive Wastes in the Atomic Energy Program" has been declassified; its publication will inform citizens generally on a subject about which public information is needed in order to dispel misconceptions and allay possible latent hysteria; it should be published as a Commission public information document.

RECOMMENDATION

12. That the Atomic Energy Commission:

a. Approve the publication, in a printing of 5,000 copies, of the draft report on "The Handling of Radioactive Waste Materials in the U. S. Atomic Energy Program," circulated separately as AEC 180/2;

b. Note that a program such as that outlined in Appendix "A" will be undertaken to widen the reporting of technical facts on the handling of radioactive wastes to professional men inside and outside the program;

c. Note that consequent upon this approval, a letter such as that in Appendix "B" will be dispatched to the Executive Secretary of the Military Liaison Committee by the Director of Public and Technical Information Service;

d. Note that at the time of issuance the printed report will be forwarded with appropriate letters of notification to the Joint Committee on Atomic Energy, the Military Liaison Committee, and the General Advisory Committee;

e. Note that at the time of issuance of the printed report a press statement will be issued and copies of the report provided to correspondents and commentators.

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LIST OF ENCLOSURES

APPENDIX "A"

Outline of program for disseminating technical information on the handling of radioactive wastes in the U. S. atomic energy program.

APPENDIX "B"

Draft letter to the Executive Secretary, Military Liaison Committee.

APPENDIX "C"

Letter from the Executive Secretary, MLC to Director, PTIS.

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APPENDIX "A"

ATOMIC ENERGY COMMISSION

PUBLIC AND TECHNICAL INFORMATION SERVICE

A PROGRAM FOR PREPARING AND PUBLISHING TECHNICAL REPORTS
ON HANDLING OF RADIOACTIVE WASTES

1. At the meeting of the Program Council on July 7, 1949, the Director of the Public and Technical Information Service was asked to develop plans for an organized presentation of technical information in the field of waste disposal and to inform the Commission of such plans.

2. Part of the problem of completing and publishing technical reports on the handling of radioactive wastes can be solved by a more exact definition of the various purposes for which such reports are required. It is recognized now that the Commission should prepare technical material on the subject, designed for;

- a. Project Engineers and Area Managers
- b. Off-Project Sanitary Engineers and Public Health Officials.

The following plan has been designed to meet both of these needs.

3. Publication of technical material for Project Engineers and Area Managers. On the basis of discussions with representatives of the Divisions of Biology and Medicine and Engineering and with representatives of the AEC advisory committees concerned with this problem, it has been determined that the following publications are desirable and feasible.

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a. A handbook on aerosols to be made generally available to Project engineers and all other Project personnel concerned with the stack gas problem.

b. A classified handbook on the disposal of radioactive wastes for the use of Project engineers, area managers, etc.

4. Publication of technical material for off-Project sanitary engineers and public health officials. The discussions referred to in the previous paragraph have also indicated the need of the following publications for off-Project sanitary engineers and public health officials:

a. A handbook on aerosols.

b. A non-classified handbook on the disposal of radioactive wastes.

c. The declassification and publication in regular technical journals of as much material as possible concerning the handling of radioactive waste disposal now contained in technical papers and reports prepared by scientists and engineers at the various sites.

5. Handbook on Aerosols. It has been determined that one of the secret Summary Technical Reports of Division X of NDRC, contains a section on aerosols, which, if extracted from the total report, could be declassified and published, and would constitute a satisfactory handbook on aerosols. Reproduction proofs of the Summary Technical Reports are available, and a thousand copies of the handbook on aerosols could be prepared by the Commission through the GPO at an approximate cost of \$1,000. The assumption is made here that the declassification of the section on aerosols in the Summary Technical Report of Division X, NDRC, will present no problem and informal discussions in this connection have been begun with the Chemical Corps through the Military Liaison Committee. This volume can be issued within one month of the date of declassification. DOE ARCHIVES

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6. Handbook on Radioactive Waste Disposal (classified).

The preparation of a classified handbook on radioactive wastes will be administered as a special project by the Technical Information Branch of the Public and Technical Information Service in the same manner as it now administers the NNES program. The Technical Information Branch will obtain the services of a competent editor on a full-time basis and set up an advisory editorial board consisting of representatives from the Division of Engineering, Division of Biology and Medicine, the Technical Information Branch, and the AEC Advisory Committees concerned with the problem of radioactive wastes. The outline of the handbook will be prepared by the editor subject to the approval of the editorial board. The editor will have the responsibility for preparing or arranging for other people to prepare specific chapters in accordance with the approved outline. The Technical Information Branch will make available to the editor its general editorial, documentary, and reproduction facilities. Though no completion date can be scheduled at this time, the Technical Information Branch will make every effort to complete the volume within twelve months.

7. Declassified Handbook. Once the classified handbook has been published and distributed throughout the Project, it would be subjected to review for declassification. As much of the material as could be declassified would be re-edited and issued as an unclassified handbook on radioactive wastes. This volume should be ready for publication approximately three months after the publication of the classified handbook.

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8. Publication of Technical Papers. Laboratory Directors, health physicists, and all research personnel employed at the various sites, will be strongly encouraged, through a communication from the heads of the appropriate AEC divisions and operation offices, to submit for declassification and eventual publication in regular scientific and technical journals, any technical papers on the handling of radioactive wastes now available anywhere within the atomic energy project and to prepare additional papers for the same purpose. The Senior Responsible Reviewers will be asked to prepare a careful evaluation of the Declassification Guide and the secrecy policy in this field. **DOE ARCHIVES**

[REDACTED] "a"
[REDACTED] documents
OF [REDACTED]

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APPENDIX "B"

DRAFT LETTER FROM THE DIRECTOR PTIS TO EXECUTIVE SECRETARY, MLC

1. Reference is made to your memorandum (MLC 41) of August 30, 1949. We have noted the general recommendation of the Military Liaison Committee against the public issuance of this report on the grounds that it contains a great deal of "official authentic information relating to U. S. atomic energy weapons programs and to other U. S. military applications of atomic energy," and that release of this information "would be of substantial assistance to a competitor nation because of its authenticity and association with our processes, rates of production, and recovery operations."

2. We do not share this view since this Report contains no quantitative data pertaining to "processes, rates of production, or recovery operations;" there is no reference at any point in the Report to any phases of the weapons program; and no details of processes are given and the only references to this field are to common chemical separation processes widely used throughout the world.

3. Security considerations, of course, have been of foremost importance in the preparation of the report. The Divisions of Production, Reactor Development, Military Application, Biology and Medicine, Research, and Security, as well as the Operations Offices at Hanford, Los Alamos, Oak Ridge, Chicago, New York, and Schenectady, have carefully considered the revised draft of the report and have approved it for release. The Declassification Branch has also reviewed the report and indicated that it contains no restricted data, and the Director of Intelligence has approved it. **DOE ARCHIVES**

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4. The specific points raised in paragraph 3 of your memorandum are considered below:

a. Page 11, line 1. Reference to sand filters. This reference has been eliminated.

b. Page 12, II ppr. 2, and Page 21, last paragraph. Reference to salvage value and valuable wastes. The fact that stored waste solutions contain Uranium and plutonium and that recovery processes are being used has been widely reported in previous unclassified documents, e.g., Smyth Report, GPO edition, pages 87-88, Fifth Semiannual Report, pages 12 and 27, Hearing before the Joint Committee on Atomic Energy, Part 12, June 21, 1949, Page 527.

c. Page 14, line 2, page 22, first 2 paragraphs. Reference to biological concentration. The work at Los Alamos is important to public health and sanitation officials, is not classified in many of its aspects, and has received publicity in the technical journals as well as the public press. The facts concerning it were issued in AEC press information release 154, January 30, 1949, which carried an abstract of remarks on the subject by C. C. Ruchhoft of the U.S. Public Health Service, and newspapers referred to this work in these stories. A Technical article on it appears in the September, 1949 issue of the Sewage Waste Journal, pp 877-883. In reviewing the first draft of the present report the Los Alamos Operations Office asked that the story be expanded in certain respects since this seemed to be one of the few areas of research at the Laboratory which could be publicized widely and since it was research of which the laboratory staff was proud. We strongly believe there is a real need for this information on the part of people living near atomic energy installations and that this need far outweighs its potential value to a competitor in advancement of his program. It seems necessary to balance the value of this information in furthering the U.S. Atomic Energy Project against the effectiveness of withholding such information in order to avoid helping a competitor escape detection of his atomic energy activities.

d. Page 17, last paragraph; page 18, lines 1 to 5; page 27, item #2. Mention of radiiodine, radioxenon, and effect of increasing cooling period. The fact that radiiodine and radioxenon are among the principal fission products is well known. Also it is well known that these products are released into the atmosphere during the dissolving of slugs, e.g., Smyth Report, GPO edition, page 87. It does not seem realistic to assume a competitor in atomic energy fields is not aware of the fact that by increasing cooling time the amount of residual short-lived radioactivity will be reduced. However, we shall be happy to discuss the point at greater length.

e. Page 27, item #5, page 28, last paragraph. Mention of research fields which we consider promising. This research involves expenditure of public funds. In the absence of specific reasons for withholding such information from the public, it has been the Commission's policy to report on all expenditures as fully and completely as possible. The **DOE ARCHIVES**

handling of radioactive wastes is a matter of increasing public concern, and it seems incumbent upon the Commission to explain the problems in this field, the success of present control efforts, and the direction of continuing research that is required in order to discharge a vitally important public responsibility. One of the barriers to public understanding of atomic energy is the sense of mystery surrounding the subject; one of the best ways to overcome this feeling is to show that many of the problems involved, for example in waste control, are solved by using known industrial techniques and equipment, and that the development work is being done by well-known industrial firms and universities who have earned public confidence by their past accomplishments.

f. Elimination of Appendix "B" because it discloses the fields of research which we consider promising, thereby relieving any competitor of the necessity of conducting the research investigation through which we have gained our present knowledge in this field.

5. The same considerations apply here as in (e) above.

It appears entirely unrealistic to assume that generalizations of this kind would assist a competitor in developing equipment. On the other hand the appendices indicate to the American public the extent to which the nation's technical resources must be mobilized to solve problems of the magnitude and importance of radioactive hazards. DOE ARCHIVES

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APPENDIX "C"

DEPARTMENT OF DEFENSE
MILITARY LIAISON COMMITTEE
TO THE
ATOMIC ENERGY COMMISSION
P. O. Box 1814, Washington, D. C.

IN REPLY REFER TO: MLC 41

August 30, 1949

MEMORANDUM FOR The Public and Technical Information Service
Atomic Energy Commission
Attention: Mr. Morse Salisbury

SUBJECT: Revised Draft of Report "The Handling of Radioactive
Waste Materials in the US Atomic Energy Program"

1. Reference is made to your memorandum of July 21, 1949. Subject report has been reviewed by the Military Liaison Committee and interested agencies of the Armed Forces.

2. The Military Liaison Committee considers it advisable to keep to a minimum the volume of official authentic information relating to U. S. atomic energy weapons programs and to other U. S. military applications of atomic energy, which through release to the American Public is made readily available to a competitor nation. The draft report on "Handling of Radioactive Waste Materials in the Atomic Energy Program" as now written contains a great deal of such information which, because of its authenticity and association with our processes, rates of production and recovery operations, would be of substantial assistance to a competitor nation. The Committee, therefore, recommends that this report not be released in unclassified form.

3. The following specific items are considered objectionable on security grounds for inclusion in an unclassified document:

- | | |
|---|--|
| a. Page 11, line 1 Reference to sand filters | Technical detail of value to a competitor. Would assist him in protecting own personnel and aid in countering detection of his atomic energy activities. |
| b. Page 12, III par. 2, Page 21 last paragraph Reference to salvage value & valuable wastes | Possible implication uranium content in wastes. |
| c. Page 14, line 2 page 22, first 2 paragraphs Reference to biological concentration | Technical suggestion of value to a competitor. Might assist in protecting personnel and aid in countering detection of his atomic energy activities. |

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- d. Page 17, last paragraph
Page 18, lines 1 to 5, Page 27, Item #2
- Mention of radioiodine, radio-zenon, and effect of increasing cooling period.
- Mention of elements exhausted to atmosphere might assist foreign surveillance of our atomic energy program. Suggestion of increased cooling time might assist a competitor to avoid detection of his atomic energy program.
- e. Page 27, Item #5, Page 28, last paragraph
- Mention of research fields which we consider promising
- Technical suggestion of value to a competitor. Might assist in protecting personnel and aid in countering detection of his atomic energy program.

f. Recommend elimination of Appendix B because it discloses the fields of research which we consider promising, thereby relieving any competitor of the necessity of conducting the research investigation through which we have gained our present knowledge in this field. In particular, the following passages are so considered:

- Page 31, first paragraph - standard filter papers
third paragraph - mention of fiberglass
fourth paragraph - identifying radioiodine as a waste gas
- fractioning and low temperature cutting
last paragraph - supersonic chambers and sudden cooling of super saturated air
- Page 32, second paragraph - spray driers and evaporators
fourth paragraph - activated sludge
- Page 33, second paragraph - biological concentration
last paragraph - strippable films
- Page 34, Johns Hopkins University - surface slimes
Massachusetts Institute of Technology - standard water purification systems
University of Texas - uptake of algac

4. The Military Liaison Committee has no objection to the printing and distribution of subject report under appropriate classification. **DOE ARCHIVES**

FOR THE COMMITTEE:

/s/ A. R. Luedecke
Brig. General, U.S.A.F.
Executive Secretary