


TN-0000-260

U. S. ATOMIC ENERGY COMMISSION
AEC MANUAL

TRANSMITTAL NOTICE

CHAPTER 0616 VITAL RECORDS PROTECTION

1. Attached is AEC Manual Chapter 0616 which sets forth policies and procedures for protecting vital records. This Chapter supersedes Chapter 0236, Micro-filming Vital Records, dated May 7, 1954, which should be destroyed.
2. Major changes in the chapter are as follows:
 - a. The title has been broadened to provide for protection of vital records by means other than microfilming.
 - b. "Vital records" is redefined.
 - c. Revised criteria are established for selecting vital records.
 - d. A new requirement is added for preparation of a Vital Records Protection Plan.
 - e. Provision is included for use of copies of vital records as well as microfilm.
 - f. Responsibility for storage of vital records is assigned to Operations Offices.
 - g. Procedures are incorporated for microfilming engineering drawings and mounting the film in aperture cards.
3. Please file this chapter in Part 0600 of your manual.

for 
General Manager

July 15, 1959

U. S. ATOMIC ENERGY COMMISSION
AEC MANUAL

Volume 0000 General Administration
Part 0600 Emergency, Disaster, and Mobilization Plans

AEC 0616-01
C&S

Chapter 0616 VITAL RECORDS PROTECTION

0616-01 Purpose and Scope

This chapter establishes a program for protecting vital records of the AEC and its major cost-type contractors against destruction from enemy attack.

0616-02 Policy

Vital records essential to the continuing AEC wartime mission (see AEC Manual Sub-section 0615-064) shall be protected by placing copies or microfilm at locations outside of target areas where protection will be afforded against destruction by enemy action. Only those categories of records identified in 0616-04 shall be protected under the provisions of this chapter.

0616-03 Definition

Vital records are those records which would be essential following enemy attack, for wartime construction, reconstruction, repairing, and operating plants and facilities directly associated with the production of weapons, weapon components, and SS materials; and select data on personnel, finance, security, and operation of emergency relocation centers.

0616-04 Selecting Vital Records

- a. The following categories of records data are designated for protection. Unless otherwise indicated, specific records data within these categories shall be selected by the offices concerned:
 1. data on completed weapons-transfers, production, and stockpile; weapon components, assemblies, and parts on hand or in production;
 2. data, including capacities, on facilities that produce or are capable of producing critical items or components essential to weapons production;
 3. data on SS materials. Inventory holdings of all SS materials on hand at all stations shall be protected by the Division of Nuclear Materials Management, Headquarters. In addition, Managers of Operations shall protect records on SS materials in production and weapons manufacturing channels;
 4. data on materials, other than SS, essential to production processes;

AEC 0616-04

VITAL RECORDS PROTECTION

5. data, including capacities, schedules, and estimates on facilities that process SS materials;
 6. major policy decisions, agreements, summaries of meetings, and other actions advancing the weapons and material production programs;
 7. the following security records:
 - (a) Master Linedex of Top Secret documents,
 - (b) Top Secret documents originated by the Division of Security, Headquarters,
 - (c) Master Facility Data Cards,
 - (d) Analysis and Review Record Cards;
 8. the following data on all AEC personnel. Similar data on employees of cost-type contractors may be selected for protection at the discretion of the Managers of Operations:
 - (a) Name and home address,
 - (b) Qualifications and special skills,
 - (c) Earnings, service, leave, and retirement records;
 9. fiscal documents evidencing the allocations and approved programs made available to contractor or to AEC offices within the overall financial plans provided to the Operations Offices by Headquarters.
 10. disaster and emergency operation plans;
 11. vital records protection plans; and
 12. records necessary to the operation and administration of Emergency Relocation Centers.
- b. In selecting the data necessary for reconstruction of weapons and production facilities, consider:
1. the importance to wartime operations of replacing the facility;
 2. the probable availability of manpower and material to reconstruct the facility;
 3. the practicability of replacing the facility in time to aid a war effort; and
 4. unique design features, special equipment and tooling, and process techniques peculiar to the plant.
- c. In considering the selection of data essential to operation of weapons and production facilities attention shall be given to:

July 15, 1959

TN-0000-260

VITAL RECORDS PROTECTION

AEC 0616-05

1. selecting all data needed for continued operation of those facilities, which, because of their importance, size, or other factors, could or would be re-established immediately after enemy attack; and
2. unique operating techniques peculiar to the atomic energy program.

0616-05 Method of Protecting Vital Records

Vital records shall be protected by placing copies or microfilm at locations sufficiently removed from target areas to provide adequate safeguards against their destruction from enemy attack. Records which will be needed immediately following enemy attack should be copies that can be read without reliance on enlarging or other equipment; other records may be copies or microfilm. In determining whether to utilize copies or microfilm the following factors should be considered:

- a. anticipated use of the records during an emergency;
- b. cost of obtaining copies versus cost of microfilm; and
- c. type of records and volume.

051 Preparation of Copies. To the extent possible, duplicate copies should be provided at the time the vital record is prepared through the use of carbon copies of typed material or extra copies of records duplicated in the normal course of business. Because of the considerable cost, full-size duplication of records solely for vital records purposes should be kept to the minimum. Copies of classified documents shall be documented and accounted for as prescribed in security regulations.

052 Microfilm. Vital records should be microfilmed when the volume is large; when records storage space is limited; or when records are in single copy only. Microfilm shall be prepared in accordance with the procedures contained in Appendix 0616-052 to this chapter.

053 Storage of Copies and Microfilm

- a. In an emergency vital records must be readily available to offices and officials having primary need for them with a minimum of reliance on transportation systems. To this end, Operations Offices shall arrange to provide adequate storage facilities for vital records at the earliest practicable date. Where feasible, such facilities should be located at, or adjacent to, field Emergency Relocation Centers. Viewing equipment shall be provided, preferably at Emergency Relocation Centers, for reading microfilm.
- b. The AEC microfilm storage vault will continue to provide storage for vital microfilm for a temporary period pending establishment of storage facilities by Operations Offices. Microfilm presently at the vault should be withdrawn by originating offices as soon as practicable.

AEC 0616-054

VITAL RECORDS PROTECTION

054 Safeguarding Classified Records. Classified records shall be safeguarded in the manner prescribed in AEC Manual Parts 2100 and 2400.

0616-06 Vital Records Protection Plans

- a. A vital records protection plan which outlines the measures to be taken for protecting vital records under the provisions of this chapter shall be prepared. Plans shall identify the categories of records selected; the facilities to which the records pertain; method of protection; location of stored records; description of equipment at off-site storage location for viewing or reproducing microfilm; and measures for maintaining the records on a current basis.
- b. The initial Operations Office and Headquarters Division plan developed under this chapter shall reach the Division of Construction and Supply, Headquarters, by December 1, 1959.
- c. Vital records protection plans shall be maintained on a current basis and major plan changes furnished as outlined above.

0616-07 Responsibilities

071 Heads of Divisions and Offices, Headquarters, shall:

- a. develop a vital records protection plan for their Headquarters office and furnish a copy of the plan to the Division of Construction and Supply;
- b. review the vital records protection plans of Operations Offices under their jurisdiction for conformance with overall policy and furnish a copy to the Division of Construction and Supply, Headquarters; and
- c. arrange with the Division of Construction and Supply for duplication or microfilming, and storage of their vital records.

072 Managers of Operations shall develop and establish a vital records protection program and plan for AEC and contractor organizations under their jurisdiction. Specifically, they shall:

- a. develop and submit a vital records protection plan, in duplicate, to the appropriate Headquarters Operating Division; and
- b. arrange for the preparation of copies or microfilm and storage of vital records of the Operations Office.

073 The Director, Division of Construction and Supply, Headquarters, coordinates the vital records protection program. Specifically, he shall:

- a. provide staff guidance and assistance in the development and establishment of field and Headquarters vital records protection programs;

July 15, 1959

TN-0000-260

VITAL RECORDS PROTECTION

AEC 0616-073

- b. review vital records protection plans developed by Headquarters and Operations Offices to ensure that they are adequate and up-to-date;
- c. arrange to continue the AEC-wide microfilm storage vault until adequate facilities are established at field locations; and
- d. provide vital records microfilming or other duplication services and storage facilities for Headquarters Offices.

TN-0000-260

July 15, 1959

MICROFILMING VITAL RECORDS

Part I of this Appendix applies to the preparation and storage of microfilm in reel form. Part II pertains to microfilming engineering drawings and mounting the film in aperture cards. Offices desiring further guidance in the technical aspects of microfilming should refer to Technical Manual 12-257, Microfilming of Records, issued by the Department of the Army.

Part I
MICROFILM REELS

1. Assignment of Reel Numbers

Each reel of microfilm is assigned a Reel Number by the Operations Office. Reel Numbers at Headquarters are assigned by the Division of Construction and Supply. Blocks of numbers may be assigned to contractors or Area Offices. Each reel of microfilm is numbered beginning with the Number 1. The number is prefixed with the abbreviation MF and the symbol of the preparing office. Additional symbols may be added as necessary to identify suboffices or contractors. The office assigning the Reel Number maintains an up-to-date record of such assignments.

2. Accountability for Classified Documents Microfilmed

Only one microfilm copy is made of any reel containing classified documents. Classified records of one division, office, or contractor are not microfilmed on the same reel with documents of others. Top Secret documents are not photographed on reels containing unclassified documents or documents of a lower classification. Secret, Confidential, or unclassified documents may be photographed on the same reel. A new series need not be designated for classified documents which have been authenticated or documented. The consent of the classifying authority need not be obtained for classified documents microfilmed for vital records purposes.

3. Preparation of Index to Microfilm Reel

- a. Purpose. An index is prepared by typewriter on letter size paper for each microfilm reel for the purpose of identifying the records microfilmed and to locate specific documents on the reel. The index is unclassified whenever possible.
- b. Contents. The index contains the name of the office having custody of the records, the number assigned to the microfilm reel, a general description of the records and the facility, project, or function to which they pertain, reduction ratio used, and the classification of each document or categories of documents microfilmed; however, each Top Secret document is listed individually.

AEC Appendix
0616-052-B

VITAL RECORDS PROTECTION
(MICROFILMING)

- c. Documentation. Classified indexes are documented.
- d. Signature. The index is signed following the last entry by the AEC or contractor representative having custody of the records or responsible for the microfilming operation.
- e. Copy Requirements and Distribution. When the microfilm reel is classified Top Secret, an original and three copies of the index is prepared and distributed as follows:

Original - to accompany microfilm

1 copy - to Operations Office (at Hdqtrs., to Div. of C & S)

1 copy - to remain with office having custody of the records

1 copy - to the Central Document Control Section, Division of Security, Washington, D. C.

When the microfilm is classified Secret, Confidential, or is Unclassified, an original and two copies of the index is prepared and distributed as outlined above, except that a copy is not sent to the Central Document Control Section.

4. Targets Used in the Microfilming Operation and Their Sequence on the Microfilm Reel

Targets for the purpose of identifying classification, reel number, reduction ratio, end of reel, etc., are of such size that when microfilmed they can be read without magnification. The microfilming of targets and other forms is in the sequence enumerated below. (See Appendix 0616-052H for a detailed illustration.):

- a. Classification. The classification of each reel is at least as high as the most highly classified document contained thereon. The classification target, carrying the appropriate extra marking, is the first image filmed. This target is microfilmed again as the last image immediately following the "End of Reel" target.
- b. Reel Number. This target consists of the prefix MF plus the Operations Office symbol and the reel number; e.g., MF-OR-21. It is the second image photographed on the microfilm reel.
- c. Reduction Ratio. This target shows the reduction ratio used in micro-filming the documents. It is the third image photographed.
- d. Index. Whenever possible, the index described in Paragraph 3 above is the fourth image photographed. If this is not practicable, substitute a target indicating that the index is filmed preceding the "End of Reel" target.

July 15, 1959

TN-0000-260

VITAL RECORDS PROTECTION
(MICROFILMING)

AEC Appendix
0616-052-C

- e. File Separator or Flash Targets. A target of distinctive shape or one bearing the words File Separator or Flash No. (1, 2, 3, etc.) is filmed between groups of documents to indicate the end of one series and the beginning of another. These targets are photographed as often as necessary.
- f. Correction Notice. This target is used when it is necessary to re-photograph a document to assure legibility. It precedes the retake of the document. The target contains the following minimum information: CORRECTION--The preceding document has been re-photographed to assure legibility and appears immediately hereafter.
- g. Certificate of Authenticity. To provide a basis for authentication of microfilmed records if required for legal or other purposes, the following certificate is filmed immediately following the last document on the reel:

This is to certify that the microphotographs appearing on this reel starting with _____ and ending with _____ are accurate and complete reproductions of the file (name of file) of _____ (Office and organization)

It is further certified that the microphotographic processes were accomplished in a manner and on film which meets with requirements of the National Bureau of Standards for permanent microphotographic copy.

Date produced

Camera Operator

Place (City and State)

- h. End of Reel. This target bears the words "End of Reel," and is photographed immediately following the Certificate of Authenticity and preceding the "Classification" target.
5. Splicing of Microfilm

Splicing of microfilm is permitted only when, due to error or mechanical failure during the microfilming operation, the microfilm is incomplete or illegible. In such cases the documents are re-photographed and spliced to the end of the reel. The "End of Reel" and "Classification" targets are filmed as the last images on the spliced film. The first image appearing on the spliced film consists of the following splice certification:

AEC Appendix
0616-052-D

VITAL RECORDS PROTECTION
(MICROFILMING)

SPLICE CERTIFICATION

The following (page (s), document (s)) identified as (e.g., pages 1 through 7, incl., of document No. XXVII-42-1A or pages 1 through 3, incl., of document classified Secret cy 4/5A) are spliced to (reel number) because of error or mechanical failure in the initial filming operation.

Date _____	Signature _____
Place _____	Title _____
Organization _____	

6. Camera Operator's Log.

A camera operator's log containing the following information is prepared for each microfilm reel: reel number, date filmed, classification, identification of flash targets, number of images, date processed, date inspected, and name of operator. The logs are retained by the office performing the microfilm operation.

7. Standard for Residual Hypo Content.

The National Bureau of Standards recommends that the residual hypo content of permanent record film not exceed 0.005 milligrams per square inch. Microfilm is processed to meet this standard. At periodic intervals an unclassified sample of exposed processed film is tested to determine the residual hypo content. Rewash of microfilm will normally remove excessive hypo. Testing service is performed on a reimbursable basis by the National Archives and Records Service, GSA, Washington, D. C., commercial microfilm organizations, and local photographic laboratories.

8. Packaging Microfilm Reels and Certifying Contents

- a. Packaging. Microfilm reels, on either metal or plastic spools, are enclosed in pressboard cartons, not more than 4" x 4" in height and width. Rubber bands or other holding devices are not placed on the reels, inasmuch as a normal unrolling of the film is desirable to permit air flow conducive to preservation and long life of film.
- b. Microfilm Certification. Form AEC-279, "Microfilm Certification," is prepared and attached to each carton. The certificate is executed by the AEC or contractor representative having custody of the records or responsible for the microfilm operation.
- c. Sealing of Carton. The certificate is pasted on the carton in such a manner that the reel number and classification are visible at one end of the carton and one of the open-end flaps of the carton will be sealed. Transparent cellulose tape is applied to seal the carton.
- d. Illustration. Placement of the certification and sealing of the carton is illustrated in Appendix 0616-052I.

July 15, 1959

TN-0000-260

VITAL RECORDS PROTECTION
(MICROFILMING)

AEC Appendix
0616-052-E

9. Transmission to Storage

Microfilm reels and typed indexes are transmitted to storage as soon as they are completed. Classified reels are transmitted as provided in Part 2100 of the AEC Manual. When the U. S. Postal Service is utilized for transmission to the records storage site, all parcels, both classified and unclassified, are transmitted by registered mail. Shipments of large quantities of classified reels, or reels containing unusually significant information concerning the national defense, are coordinated with the local security office. The words microfilm, film, reels, rolls, vault, or their abbreviations, or any phrase or words indicating that microfilm or the storage location is involved, do not appear on receipts or wrappers transmitting film in order to avoid any compromise as to the location of the storage site.

10. Withdrawal from Storage

Withdrawal of film from the AEC microfilm storage vault or other storage location is restricted to the Operations or Headquarters office which deposited the microfilm, or higher authority.

Part II
MICROFILMING ENGINEERING DRAWINGS

1. Film

Engineering drawings are filmed on 35mm safety film meeting the standards of the National Bureau of Standards for permanent record microfilm.

2. Microfilm Quality

Quality images of engineering drawings are of the utmost importance. Adequate quality can be obtained through proper lighting of the image, photographing the original tracing, use of copy board-type microfilm camera, and accurate control of film processing. Standards for quality microfilm are:

- a. Background density shall lie between 1.0 and 1.3 as indicated on the Ansco-Sweet Densitometer or equivalent.
- b. Resolution of the camera image shall be at least 100 lines/mm overall as calibrated through the use of the National Bureau of Standards Micro-Copy Resolution Test Chart.
- c. Residual hypo shall not exceed 0.005 milligrams per square inch.

To aid in determining the resolving power of the processed film, the NBS Micro-Copy Resolution Test Chart is photographed at the beginning and end

AEC Appendix
0616-052-F

VITAL RECORDS PROTECTION
(MICROFILMING)

of each reel of film and whenever the reduction ratio, lighting, or camera setting is changed.

Periodic tests of the microfilm are made to assure adherence to the standards. Testing service is available from commercial microfilm organizations and local photographic laboratories.

3. Kind of Copy

Microfilm of engineering drawings furnished for vital records protection consists of the master negative or a first generation microfilm copy.

4. Film Spacing

Sufficient space is provided between images on the microfilm to permit mounting of individual images in aperture cards. The camera mechanism is so adjusted that 2 inches plus 1/16 inch minus .000 of film is advanced for each exposure regardless of the reduction ratio employed or the size of the material being photographed.

5. Reduction Ratios

Engineering drawings are microfilmed at the following reduction ratios:

Drawings measuring up to 17" x 22"	20 to 1
Drawings measuring larger than 17" x 22" up to 22" x 34"	24 to 1
Drawings larger than 22" x 34"	29 to 1

6. Aperture Card

Microfilm images shall be mounted in the "D" size aperture in military position in EAM, marginally-punched, visible index, or other cards measuring 3-1/4" x 7-3/8". Cards have a hard smooth surface on both sides, uniform length and width within .010", have a minimum thickness of .0072" and a maximum thickness of .012", are free from creased edges and do not adhere to each other because of excessive burring or because of excess or tacky ink. Cards carry identifying information such as the drawing number; drawing title; name of facility or project; name or number of building, assembly or part; sheet number; date or number of revision; and classification, if any.

7. Classified Aperture Cards

Aperture cards containing classified images are classified and marked as provided in AEC chapters 2105 and 2106 with the following exceptions:

July 15, 1959

TN-0000-260

VITAL RECORDS PROTECTION
(MICROFILMING)

AEC Appendix
0616-052-G

- a. The consent of the classifying authority need not be obtained for preparing classified aperture cards to be used for vital records purposes. Such authority is obtained for classified aperture cards prepared for other than vital records purposes.
- b. Classified aperture cards are documented in the usual manner except that the series designation will be MF (for microfilm)(authorized exceptions to the requirements for documenting drawings apply equally to classified aperture cards). For example, documentation of the first two copies of an aperture card will read as follows:

This document consists of 1 page, No. 1 of 2 copies, Series MF

- c. Reproductions made from microfilm aperture cards are documented using the series designation MF followed by the letter A for the original reproduction, B for the second, etc.
- d. The classification is placed on the face of the card. In lieu of the full extra markings the term "Restricted Data" or "Defense Information," whichever is applicable is placed beneath the classification.

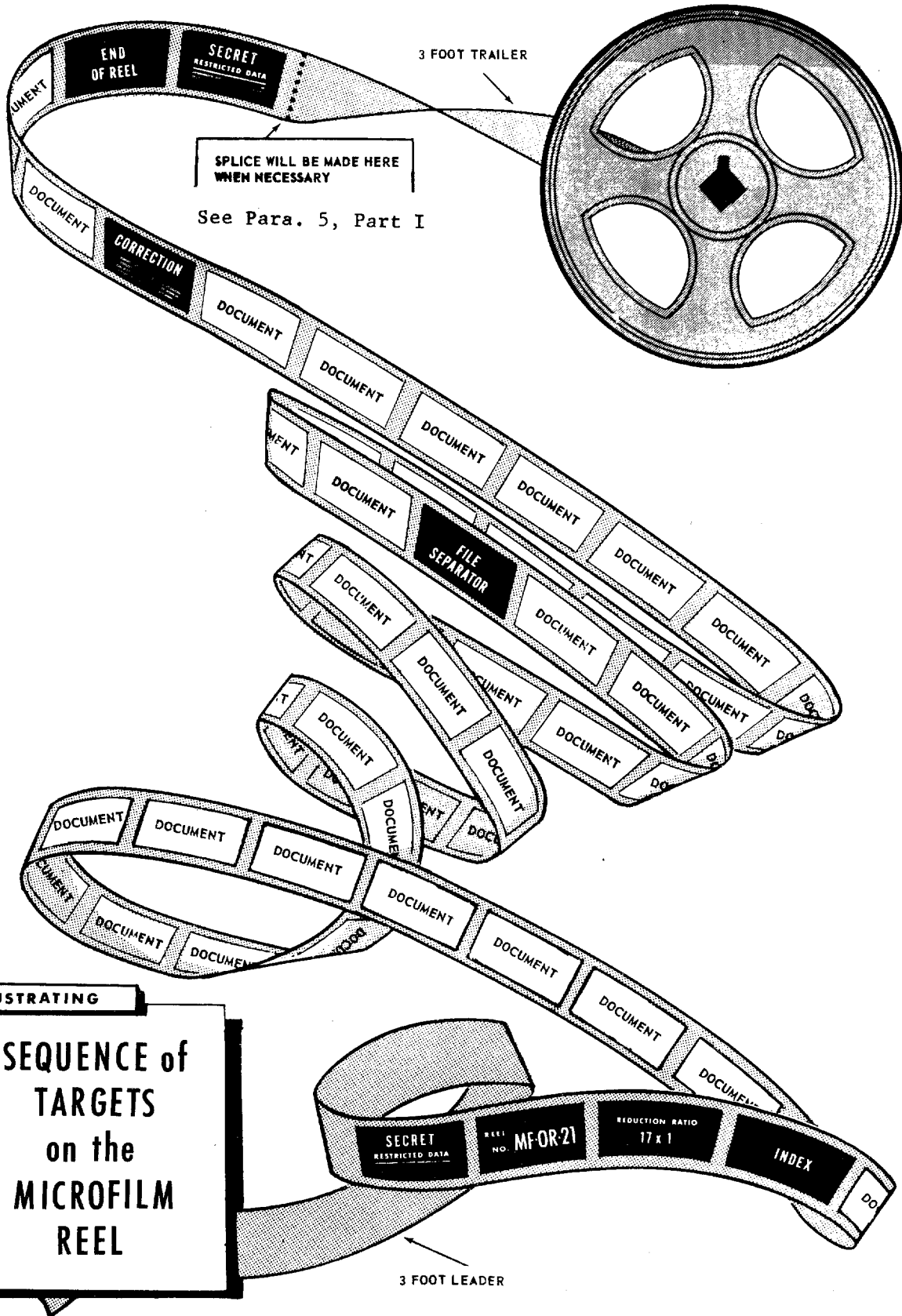
8. Transmission of Aperture Cards to Storage

- a. Cards are transmitted to storage in the same manner as provided for microfilm reels in paragraph 9 of Part I of this Appendix. Classified cards are accompanied by a listing describing each card (classification, drawing number, date or number of revision, and copy and series designation).
- b. Prior to transmission, cards are arranged in logical order by project or facility; assembly, part or building; and drawing number. Offices having large collections of cards provide the storage point with card guides to identify aperture card groups and facilitate filing and finding.
- c. Transmission of cards containing revisions or additions to cards on file at the storage location should clearly indicate the proper group in which they are to be filed.

9. Withdrawal of Aperture Cards from Storage

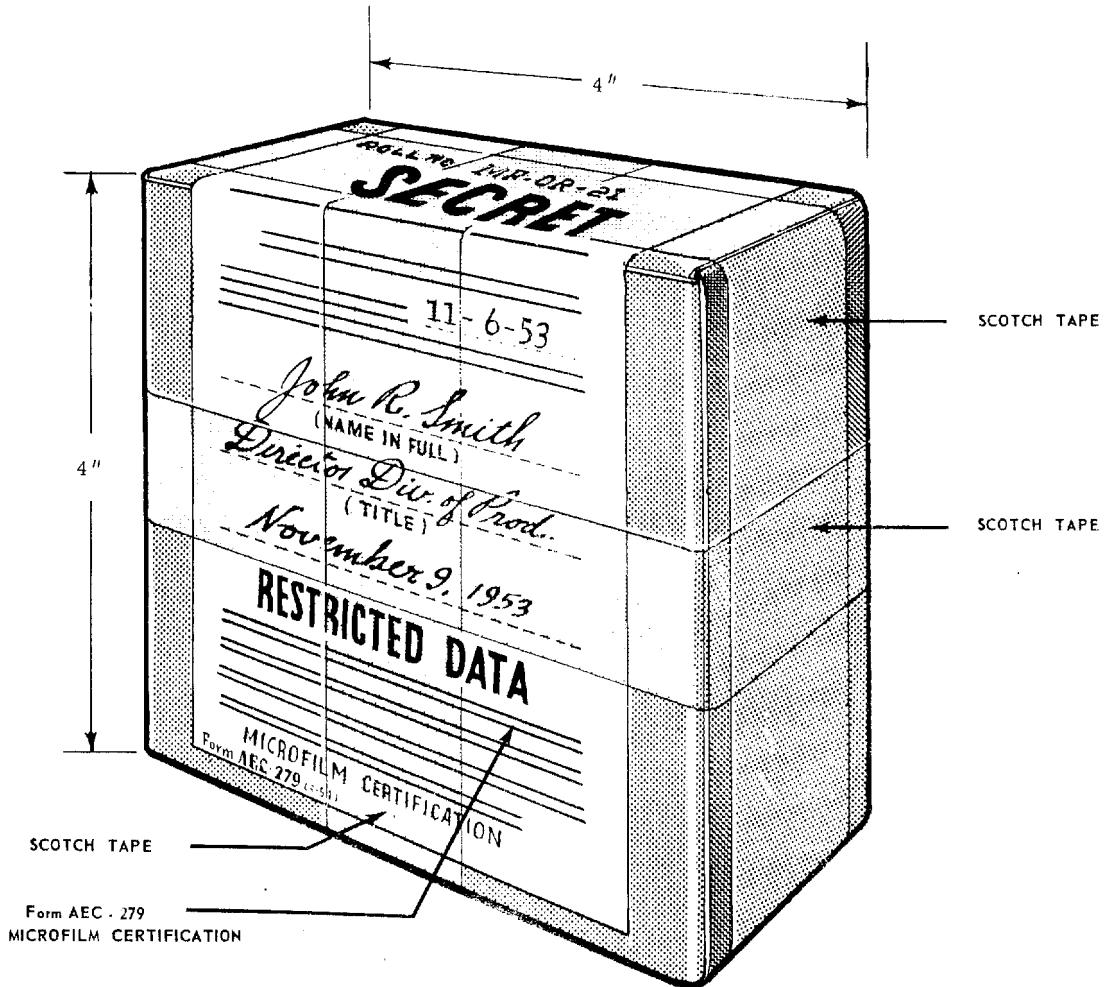
Withdrawal of aperture cards from storage is restricted to the depositing office or higher authority.

July 15, 1959



VITAL RECORDS PROTECTION

AEC Appendix
0616-052-1



ILLUSTRATING

EXECUTION of
MICROFILM
CERTIFICATION
and
SEALING of
MICROFILM CARTON