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[redacted]

John A. Derry, Assistant to the General Manager, Washington
R. W. Cook, Deputy Manager, Field Operations, Oak Ridge

September 12, 1947

ESTABLISHING CRITERIA FOR PROPER CLASSIFICATION OF INFORMATION

SYMBOL: AGE-4

FINAL DETERMINATION
UNCLASSIFIED
By: [signature] 3-7-85
Date

In compliance with your letter on the above subject of August 9, 1947, there has convened a board of representative personnel from areas and facilities under the jurisdiction of the Manager of Field Operations. Due to the diverse points of view of the production and research facilities, the Board was unable to function as a unit and a division was necessary between these two functional groups.

The two production groups, having well crystallized and established operating procedures, were able to formulate specific examples of material to be graded in the various classification categories. The research group, on the other hand, was unable to agree with the tentative list of examples transmitted by your letter until amended and has not formulated a list of examples. Such a list for research activities necessarily would be both incomplete and voluminous if not expressed in generalities due to the nature of research activities. It is the opinion of the research group that a permanent full time classification board similar in character and composition to the Declassification Branch, together with Responsible Reviewers, but not of equal magnitude will be required to resolve the problems of classification.

Consequently, specific examples may be approved for production facilities but the research facilities must be governed by the general list of examples as mentioned in the penultimate paragraph of your letter.

Your attention is directed to the fact that the Board was almost unanimous in denouncing the use of the category designation "Restricted" for describing other than "Restricted Data" and likewise objected to the continued use of the terms "Top Secret", "Secret", and "Confidential" for subdivisions of "Restricted Data".

The report of the Board with examples appended is inclosed in triplicate as requested by your letter.

BEST COPY AVAILABLE

R. W. Cook

1 Incl.:
Report w/appendices

[redacted]

cc: Mr. Cook w/incl.

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Report of Meeting of Classification Board During Week of

September 8, 1947

During the week of September 8, 1947, a Classification Board assembled in accordance with instructions of R. W. Cook, Deputy Manager, Field Operations, dated August 28, 1947, for the purpose of formulating standards of classification and the preparation of a comprehensive tabulation of particulars and examples of matters which should be graded TOP SECRET, SECRET, CONFIDENTIAL, RESTRICTED, and UNCLASSIFIED. Those in attendance were:

Lt. Col. Wm. R. Smith, Operations, CEX
Charles A. Keller, Technical Information Branch, CEX
A. H. Halland, M.D., Medical, CEX
Russell H. Ball, Research Division, Berkeley
Harry E. Parker, Operations Div., Research Branch, NEW
W. K. Crane, Operations Div., Research Branch, NEW
G. M. Hostetter, Clinton Production Division, Oak Ridge
Paul L. Murphy, AEC X-10 Security Office
T. J. Haycock, Clinton Production Division, K-25
Robert J. Speer, Clinton Production Division, K-25
R. B. Korsmeyer, K-25
Sylvan Cromer, K-25
M. Rodin, Chicago
Haylande D. Young, Argonne National Laboratory
M. M. Haring, Monsanto Chemical Company, Dayton
E. A. Walker, AEC, Dayton
George H. Lee, Patent Section, Oak Ridge
G. B. Everly, Research Division, Oak Ridge
Paul W. McDaniel, Division of Research, Washington
John P. Howe, G.E. Atomic Power Laboratory, Schenectady
F. R. Leach, AEC, Schenectady
H. A. Jackson, AEC, Schenectady
A. L. Rydzewski, Security Division, Oak Ridge
G. S. Brackett, Administrative Division, Oak Ridge
H. C. McBirney, Y-12
Thomas A. McKenzie, Y-12
W. T. Hays, Y-12
T. S. Chapman, Research Division, Oak Ridge
H. A. Saller, Battelle Memorial Institute, Columbus
Edgar J. Murphy, Clinton Laboratories
John Martens, AEC, Clinton Laboratories
W. B. Damm, Clinton Laboratories

RESTRICTED

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This Board reviewed the proposed draft of GM Instruction _____, Security, Classification of Information. The Board concurred with the statements on the first five pages of this draft with the exceptions listed below:

a. The term "Restricted Data" should be inclosed in quotation marks in all places in which it occurs in the document.

b. The table in subsection 2 b on page 3 should be deleted and the second sentence of the subsection should read in this manner: "Thus, classified matter may consist of 'Restricted Data' as defined in the Atomic Energy Act of 1946 or other classified information and may be graded as TOP SECRET, SECRET, CONFIDENTIAL, or RESTRICTED".

c. Subsection 2 d on page 3 should be amended to include the word "Drafts" placed after the word "notes" and prior to the word "etc." at the end of the subsection.

d. Subsection 2 g on page 4 should be amended to read "TOP SECRET: Certain documents, information, and material, the security aspect of which is paramount and the unauthorized disclosure or loss of which would cause exceptionally grave danger to the nation shall be classified as TOP SECRET".

e. Subsection 2 h on page 4 should be amended to insert "or loss" after disclosure so that the subsection reads: "SECRET: Certain documents, information and material the unauthorized disclosure or loss of which, etc."

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f. Subsection 2 j on page 4 shall be amended by the deletion of the words "which require protection" and the substitution of the words "which should be denied uncontrolled circulation for reasons of administrative privacy, or which should be denied immediate publication until invention rights have been cleared or assembled with related papers for simultaneous publication in official release.

While the Board agrees with the philosophy of pages 1 to 5 of the proposed instruction, it objects to the use of certain terminology. The use of the terms, TOP SECRET, SECRET, and CONFIDENTIAL for "Restricted Data" is considered objectionable in that these terms are also used by other government agencies for information which is not considered "Restricted Data". Particular objection is raised to the use of the term "Restricted" for information which does not come within the meaning of the term "Restricted Data".

The Board has not determined a satisfactory solution to the terminology but appreciates the confusion which results from the use of military terminology to designate "Restricted Data" and from the use of the term "Restricted" to identify a classification which is not "Restricted Data".

The Board accepts the necessity for both a SECRET and a CONFIDENTIAL category only under the conditions that SECRET matter receive the treatment implied in the use of receipts and now accorded the unauthorized category "Secret Limited"; and that documentation and receipts be not required for CONFIDENTIAL matter. In case of the non-observance of

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these conditions there is a strong feeling in the Board to discontinue the use of one of the categories.

In the formulation of examples for the purpose of preparing a comprehensive list, the Board has made no distinction between "Restricted Data" and other classified matter and has operated under the admittedly erroneous converse assumption that all matter classified CONFIDENTIAL and above would be treated as "Restricted Data" within the Commission and its contractors.

If classified matter is marked only TOP SECRET, SECRET, CONFIDENTIAL without further identification as to whether or not it is "Restricted Data" it is subject to compromise in terms of the Atomic Energy Act although the security provisions applicable to information in these categories is maintained. The problem will be most acute in the distribution of information within other government agencies by personnel who have cognizance of Atomic Energy Commission activities. Concern of the Board arises from the fact that the clearance procedures required by other government agencies for the handling of material classified TOP SECRET, SECRET, CONFIDENTIAL, or RESTRICTED does not coincide with that of the Atomic Energy Act for the clearance of personnel handling "Restricted Data" of the same classification.

Due to the diversity of individual interests and the limited time allowed the Board, it was not possible to arrive at complete agreement in the wording of examples tabulated in a comprehensive list of examples of the

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various grades of classified information. Consequently, examples are presented which are subject to entirely different interpretation by different agencies. The examples listed in pages one to eight of GM Instruction _____ have been found to be sufficiently broad as to be pertinent in general to most classified activities. It has been necessary to avoid the specific examples apparently desired to result from the conference due to controversy over specific statements or inability to state the example in unrevealing terms. Since the broad nature of the examples will necessitate numerous exceptions, it is believed that these examples cannot be considered as firm but should be used clearly as specified, i.e., only as guiding examples to be followed at the discretion of the classifying officer. Several members of the Board are emphatic in stating the principle that the example can be applied only in very general cases and must not be considered as mandatory.

The Board found itself unable to evaluate the degree of danger to the nation residing in compromise of the various activities and the degree of unique importance connected with the various items. It recommends that a means be set up to establish and define these objectives. This might best be accomplished by a permanent central classification board and associated local classification officers as discussed below.

The heated discussion which occurred during the Board meeting with respect to interpretation of the general examples furnished with the draft of GM Instruction _____ [redacted] indication of its inadequacy as

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a final criterion of classification. It became apparent early in the meeting that agreement could not be reached between various representatives as to the meaning of the examples and that the acceptance of the list would be a compromise between various opinions rather than a true evaluation of the examples in term of the definitions of the various classification grades. The Board, therefore, recommends extensive further study shall precede the formulation of a classification guide for use by the rank and file. By comparison with the declassification guide the amount of effort which has been expended in the preparation is wholly insignificant and inadequate.

To accomplish the preparation of a satisfactory classification guide, it is believed necessary to establish within the Commission a permanent full time classification board composed of competent scientific analysts who are able to evaluate technical data in terms of the benefit which a foreign nation could derive from its compromise or the embarrassment which could accrue to the Commission from its disclosure. To supplement the permanent classification board, who would rule on matters of policy, local representatives skilled in the above arts and occupying a position analogous to the Responsible Reviewers of the Declassification Branch are required to give local interpretations of policy statements. These local representatives would also be in a position to submit local questions requiring policy decisions to the permanent classification board. The classification board should be similar in character and composition to the Declassification Branch. There are apparent advantages in having classification authority delegated as an additional duty to the present Declassification Branch.

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It is anticipated that after sufficient experience, the classification board might prepare a classification guide which would be both acceptable to and consistent in all facilities. The present manner of listing examples indexed as to grade of classification is not considered suitable for the using agency. The form which is considered desirable is that of a topical index which indicates the classification which should be applied to each of the individual items. It is suggested that the index to the project literature might be used as a starting point.

Since the examples accompanying OM Instruction _____ are accepted only with reservation and in amended form, agreement on specific examples was not accomplished. However, specific examples submitted by the Clinton Production Division and the Hanford Engineer Works are forwarded without review or comment by the Board for consideration by the Washington headquarters. No uniform proposal was possible from research facilities.

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Subject: CLASSIFICATION OF RESTRICTED DATA

The representatives of the Office Of Hanford Directed Operations are in general agreement with the O.S. Instructions on Security-Classification of information. It is felt, however, that the classification "Restricted" could well be changed to "Administrative or Limited" since the term "Restricted" could be confused with "Restricted Data", and since material presently classified as "Restricted" is usually so classified for "Administrative rather than for security reasons.

A tabulation of particular examples of matter which should be classified "Top Secret", "Secret", "Confidential", and "Restricted" pertaining to the Office of Hanford Directed Operations follows:

1. The following are guiding examples of information or matter which should be graded "Top Secret":

   a. Raw materials inventory (unscaled)

   b. Product inventory (unscaled)

   c. Periodic and accrued products

   d. Unit costs for production of plutonium

2. The following are guiding examples of information or matter which should be graded "Secret":

   a. Dimensions and weight of billets, rods, and slugs

   b. Composition of canning baths

   c. Fabrication yields

   d. Raw materials inventory (coded)

   e. Extrusion outgassing and bath temperature

   f. Pile dimensions (graphite bars, overall lattice, process

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[redacted]

tubes, shielding, etc.)

g. Graphite and shielding materials

h. Pile reactivity

i. Xenon pile operation levels

j. Power computer

k. Dimension, pattern, and composition of control safety rods

l. Decay storage period

m. Concentration and identity of fission products

n. Separation time cycle

o. Makeup of chemical processing solutions (when definitely identified)

p. Complete design drawings

q. Plutonium yields

r. Production irradiation (coded)

s. Period and accrued production (coded)

t. Vegetation contamination studies

u. Animal contamination studies

v. Detailed lists of classified documents

w. Budget estimates

In general engineering formation pertaining to the plutonium process should be classified secret and the engineering "know how" should be closely guarded.

3. The following are guiding examples of information or matter which should be graded "Confidential":

a. Fish laboratory studies, Monthly essential Materials, Monthly General Ledger Trial Balance, Monthly Instrument-Preliminary.

4. The following are guiding examples of information or matter which should be graded "Restricted":

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a. Makeup of chemical process solutions for individual operations when solutions are not identified

b. Weekly Health Instrument Summaries

c. Organization Charts

d. Technical Statistical Study, Monthly Process results, Monthly elected-Preliminaries

5. The following are guiding examples of information or matter which should be graded "Unclassified":

a. Radiation survey instruments manufactured commercially, excluding the use thereof

b. Scientific measuring instruments of all kinds which are in general laboratory use

Wendell K. Crane

Harry E. Parker

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Appendix I

Examples of Classified Matter

1. THE FOLLOWING ARE GUIDING EXAMPLES OF INFORMATION OR MATTER WHICH SHOULD BE GRADED TOP SECRET:

   a. Production figures, unit costs, inventories, and schedules, both actual and forecast, referring to the production of uranium 235, uranium 233, plutonium and such other special materials which the Commission may designate from time to time as being in this category. Production figures obtained from Y-12 pilot plant shall be considered to be of this category.

   b. Vital information pertaining to the military use of uranium 235, uranium 233, plutonium and other materials specifically designated by the Commission. This critical information includes details of design, fabrication, time of use, shipping data pertaining thereto, and stockpile information of weapons in existence and under development. If details are partial, the SECRET classification may suffice.

   c. New scientific discoveries believed at the time of discovery or later declared to be of potential major military significance.

   d. Quantities (the material itself) of uranium 235, uranium 233, and plutonium as may be established by the Commission from time to time as TOP SECRET material. (n.b. the Board recommends that the quantity be determined by a board consisting of a representative of the contractor and the AEC at each location, both of whom have intimate knowledge of the use of this material, have authority to classify those quantities of material SECRET or TOP SECRET. Quantities more than the safe amount should be treated as TOP SECRET while in transit, except while in an approved exclusive area.

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e. Information concerning the utilization of atomic weapons where recommended by the Armed Forces.

f. Documents revealing comprehensive future operational plans for the Commission on matter of high overall policy.

g. Information which would reveal the schedule, route or method of shipment of all top secret material or of secret material when such shipment is routed or schedule such as to indicate production or enable interception. (n.b. the Board considers this provision impossible to accomplish)

h. Documents containing medical, radiological and other technical information vital to national defense, the common security and military secrecy.

2. <u>THE FOLLOWING ARE GUIDING EXAMPLES OF INFORMATION OR MATTER WHICH SHOULD BE GRADED SECRET</u>:

a. Unit costs, inventories and schedules, and assay data pertaining to uranium, thorium and plutonium or such other special materials as the Commission may direct, both actual and forecast, referring to research and/or development (pilot plants except as covered in 1 a) facilities of the Atomic Energy Commission.

b. Information regarding specific design details, diagrammatic or descriptive, of the complete basic or key equipment, apparatus, instruments or machinery developed for the Manhattan Project or the Commission and employed in the processing and production of uranium 233, uranium 235, plutonium, and other designated material. In the electromagnetic plant, the calutron would be classified SECRET and the detailed design drawings of this instrument would be classified SECRET. In the Hanford Pile Plant, the lattice design dimensions of the piles, power levels and chemical separation plants and the piles themselves would be classified

SECRET. In the gaseous diffusion plant, the units and the details of the diffusion apparatus and pumps would be classified SECRET.

c. Documents prepared from information developed from the Manhattan Project or the Commission containing complete flow sheets, diagrams or reactions including specific pressures, temperatures, voltages, rates, formulae or other operating details specifically related to a critical step in the preparation, processing, chemical separation, purification or metallurgy of uranium and thorium and such other designated materials from the ore to the finished metal.

d. Documents prepared from information developed for the Manhattan Project or the Commission containing complete flow sheets, diagrams or reactions including specific pressures, temperatures, voltages, rates, formulae or other operating details specifically related to a critical step in the preparation, processing, chemical specifically related to a critical step in the preparation, processing, chemical separation, purification or metallurgy of uranium 233, uranium 235, plutonium and their alloys, and such other materials as may be designated.

e. The nuclear characteristics of fissionable or fertile materials including capture, fission, and scattering cross sections for all energies of neutrons, number of neutrons produced per fission, spontaneous fission rates, fission neutrons spectra, and related information for all fissionable isotopes of the elements.

f. Documents containing information on the stocks and reserves of normal uranium, thorium, and such other materials as the Commission may from time to time designate.

g. Information disclosing the existence of unique operational or production obstacles and difficulties, their specific characteristics and solutions.

h. (1) All medical records, reports and correspondence which embodies or refers to other technical information classified secret or higher.

(2) Certain selected human administration experiments performed under M.E.D.

(3) All medico-legal and insurance statistics which refer directly to process hazards.

(4) Claims, allegations or reports of injury on "investigation prohibited" cases where the material or process involved is considered to be classified secret.

(5) All medical reports, references and correspondence dealing with certain special hazard problems, as for example, the medical aspects of criticality accidents.

i. Specific containers and their unique design details used for shipping secret and top secret material.

j. Complete specifications of materials such as graphite, thorium, beryllium, etc., that are essential to and have been developed in connection with a self-substaining chain reaction or for special application.

k. Information concerning the utilization of atomic weapons where recommended by the Armed Forces and where such information is not classified as TOP SECRET.

l. Unique process information, such as the following:

(1) The overall enrichment achieved by the electromagnetic, thermal diffusion, and the gaseous diffusion processes, the enrichment achieved per stage in each plant, and the isotopic constitution of uranium at any stage of the process.

(2) Methods of manufacturing of the barrier used in the gaseous diffusion plant, the barrier itself, and the research, development, and testing connected with its manufacture and improvement.

(3) Experimental, theoretical, and engineering work on converter, breeder, power and experimental piles; data and other information pertaining thereto.

(4) Design and efficiency of neutron reflectors and shields specifically for piles.

(5) Research, design, and operation of chemical processes involving extraction and decontamination of trans-uranic compounds.

(6) Research, design, and operation of chemical processes for uranium extraction and decontamination from thorium.

(7) Information pertaining to preparation, such as fabrication, canning, and testing of metallic uranium and thorium for pile irradiation.

(8) Information pertaining to the preparation of certain designated materials together with research design and operations incidental thereto.

m. Documents showing the meaning of a code, name or symbol connecting documents, material or operations classified as SECRET.

n. Safe combinations of repositories containing matter classified no higher than SECRET.

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c. Documents or information revealing future operational plans of individual facilities of the Commission, problems or proposals, matters of general policy and comprehensive reports not classifiable as TOP SECRET.

3. THE FOLLOWING ARE GUIDING EXAMPLES OF INFORMATION OR MATTER WHICH SHOULD BE GRADED CONFIDENTIAL:

a. Information revealing specific design details of incomplete components of basic or key equipment, apparatus, instruments, or machinery employed in the processing and production of uranium 235, uranium 233, plutonium, or other designated material which will disclose information regarding the nature of the process.

b. Incomplete, uncoded flow sheets, diagrams or reactions, or specific pressures, temperatures, voltages, rates, formulas, and other operating details, related to a non-critical step in the preparation, processing, separation or purification of uranium and thorium from the ore, and of the separation of uranium 235, uranium 233, plutonium, and other specifically designated materials which were developed for the Manhattan Project or for the Commission.

c. Total inventories of stocks and reserves under the control of the Atomic Energy Commission of beryllium and beryllium oxide, deuterium and deuterium oxide, graphite and materials of similar importance to the Project. (n.b. The Clinton Production Division is not prepared to make a recommendation as to this paragraph. However, it feels that information disclosing production figures, production schedules, stocks or reserves (at least those maintained by the AEC) should be retained in the Secret category.

d. Unique chemical and physical methods of analysis and testing, used as process control or acceptance tests in critical stages of the manufacture of fissionable and other specially designated material - when such information is not classified as SECRET or TOP SECRET.

e. Information concerning the utilization of atomic weapons where recommended by the Armed Forces and where such information is not classified as TOP SECRET or as SECRET.

f. Documents showing the meaning of a code, name or symbol connoting documents, material or operations classified as CONFIDENTIAL. Concerning technical and operating information which should not be disclosed to the general public except on control basis, such as non-critical specifications in the manufacture of fissionable materials, technology, design, and fabrication of equipment and apparatus with specific application to a process is not indicated. RESTRICTED category: documents concerning operating information such as routine representative showing as of non-critical control forms referring only to a small portion of a process.

g. (1) All documents, claims, allegations and medical reports on injury on "investigation prohibited" cases, including reports of the Advisory Board on Occupational Disease Claims.

(2) All "programmatic" medical research.

(3) All records of exposure to classified substances.

(4) All documents and correspondence which state, refer to or give intimation of known medical or public health hazards.

(5) All documents and correspondence relating to matters of policy, planning and procedures, the given knowledge of which might compromise or cause embarrassment to the Atomic Energy Commission and/or its contractors.

4. THE FOLLOWING ARE GUIDING EXAMPLES OF INFORMATION OR MATTER WHICH SHOULD BE GRADED RESTRICTED: (This does not refer to restricted data)

a. Documents concerning relatively unimportant administrative, fiscal and personnel matters which should not be disclosed to the general public except on a controlled basis, such as organization charts, and plans, policy-making regulations, working conditions of employees, etc.

b. Information developed for the Manhattan Project or for the Commission, disclosing non-critical steps in the preparation, processing, separation, purification and metallurgy (if applicable) of beryllium and beryllium oxide, deuterium and deuterium oxide, graphite and materials of similar importance to the Project except where these materials are incorporated with fissionable materials.

c. Information which, although otherwise unclassified or has not been cleared for publication through the Patent Advisor or his representatives and the publication or public use of which might adversely affect the patent position of the Government, such as:

(1) Information which describes or discloses any novel device, machine, apparatus, article, process, method, or composition.

(2) Information which proports to establish scientific priority and which might conflict with legally determined priority of invention.

5. UNCLASSIFIED: (Refer to Declassification Guide)

a. The following materials which are or have been classified shall in the future be classified solely on the basis of that information which

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can be obtained from them. This may be used as a guiding principle for other materials except for those which are fissionable.

(1) Natural uranium and its compounds.

(2) Thorium and its compounds.

(3) Beryllium and its compounds.

(4) Graphite.

(5) Deuterium and its compounds.

(6) Radium and its compounds.

(7) Radium-beryllium sources.

(8) B^{10} and its compounds.

(9) Radio-isotopes

(10) Stable-isotopes

Examples of items from which classified information (restricted data) may be obtained are:

(1) Case of uranium and thorium.

(a) Process feed stock.

(b) Fabricated pieces which would reveal significant reactor (bomb) dimensions.

(c) Quantities of material which might reveal amounts used in processes, schedules of production and development of future plans.

(2) Beryllium and graphite

(a) Reactor parts

(b) Special application

b. Information of a scientific or technical nature which relates exclusively to certain fields of science as announced from time to time by the Atomic Energy Commission. Such information will not be connected with the Atomic Energy Commission in such a way as to disclose the motivation for development or a classified application of the information. Any newly developed information in these fields which could have application in plants for the manufacture of classified substances or to military utilization of atomic energy must be given an appropriate classification. It shall be the responsibility of the originator of each document concerned to see that a document issued as "unclassified" under the provisions of this sub-paragraph is properly scrutinized to ascertain that security of information and patent rights of the government are protected. The provisions of this sub-paragraph are applicable to the following:

(1) Instruments, as follows:

(a) Counters

(b) Ionization chambers

(c) Energy-insensitive neutron detectors

(d) Cyclotrons, van de Graaff generators, betatrons, and other particle accelerators.

(e) Electronic and electrical circuits relevant to the above.

(2) Fluorocarbon chemistry and manufacture.

(3) Fluorine chemistry.

(4) All medical and biological documents, reports and research not directly relating to experimental human administration, process hazards, contamination hazards or public health hazards, and which will not result in mass hysteria on the part of employees or the public, or in idle speculation, or cause adverse claims against the Atomic Energy Commission and/or its contractors.

(5) Developments, including those from the Health Protection point of view, in the design and construction of laboratories, instruments and equipment provided it does not reveal interest in development of specific processes and is not of primary interest to technology rather than basic research.

e. Documents relating to unclassified activities of all types, including routine administrative matters and the like.

d. Information already officially released by the Manhattan District or by the Atomic Energy Commission. Matter which purports to contain only "previously released information" will be carefully scrutinized to insure that no change in meaning or addition of classified facts has been made.

6. ACCUMULATIONS OF CLASSIFIED INFORMATION:

a. It must be recognized in assigning appropriate classification to information that it is possible to accumulate, into one report, file, library, or vault, so many facts, each one of a relatively low "classification," that the accumulation gains a resulting classification higher than any of the individual parts. Thus, a library or vault containing a great many SECRET reports and documents might contain so much and so comprehensive an accumulation of such data as

as to warrant the consideration of the library or vault as TOP SECRET.

7. CONTRACTS AND FISCAL DOCUMENTS:

a. Contracts and fiscal documents (including but not limited to cost reports, fiscal reports and vouchers) will be classified only when the information contained therein is of such a nature that the document can be considered as "classified matter" as defined in sub-paragraph 2. b. of this Instruction. The various degrees of classification are based on the results of unauthorized disclosure or loss of classified matter and are defined in sub-paragraphs 2 g., h., i., and j. of this Instruction. These definitions will be used in establishing the degree of classification of individual contract and fiscal documents containing "classified matter".

The Board found objection to the wording of the section dealing with nuclear properties of fissionable materials and referred this paragraph to Dr. Wollan, Clinton Laboratories, who is the Responsible Reviewer in this field for declassification. Dr. Wollan has submitted the wording below which he considers to represent the thought which it is desired to convey:

"Information developed for the Manhattan Engineer District and the AEC on the following nuclear characteristics of the fissionable isotopes of uranium, plutonium and thorium, capture, fission and scattering cross sections for neutrons of energies from thermo to 10 MEV, the number of neutrons produced per fission, spontaneous fission rates and energy distribution of fission neutrons".

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1. Availability and assay of stable isotopes (as well as material itself) produced in the calutron.

2. Research on new assay equipment and techniques for uranium as well as stable isotopes.

3. Fundamental chemistry of uranium and its compounds (e.g., distribution coefficients for solvent extraction, reaction kinetics, vapor pressures, new compounds, solubilities, dissociation constants, etc.)

4. Basic data on emission, absorption, X-ray, and fluorescent spectra of uranium and its compounds.

5. New analytical methods (not critical to production control) for determination of uranium or other elements.

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9. All engineering and technical research and development work relative to the problems of K-25 and other installations carried on at K-25 and not classified Top Secret or Secret.

ELECTROMAGNETIC PLANT.

Top Secret.

1. Combined operational schedules and comprehensive plans interdependence of the K-12 and other production installations (particularly feed and product transfers and product metal production).

Secret.

1. Research and development on critical electromagnetic plant equipment and processes (namely, filaments, ionization chambers, accelerating system, ion receivers, magnetic fields, etc.).

2. Research and development on critical equipment and processes employed in the production of stable isotopes.

3. Number of samples, assay data and results, etc. on uranium processing.

4. Experimental details, calculations, and results of critical mass investigations.

5. Operating data, capacities, design, and process development relative to the chemical separation, purification, or recovery of uranium as now employed or reasonably contemplated.

6. Specifications of charge materials as to required chemical purity.

7. Operational details such as pressures, accelerating voltage, magnetic field, ion currents, and J temperature to calutron production of U-235.

8. Suitably coded top product assay when employed in routine production transfer.

Confidential.

1. Names and formulas of uranium compounds employed in, or produced by, any stage of plant operation.

The items listed below should serve as a partial guide to declassifiable information as defined in the current Declassification Guide:

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6. Quantities of instruments, pumps or any other equipment utilized in the cascade.

7. Description of shaft seals

8. Description of diffusions and the process gas coolers contained therein.

9. Theory of the gas bearing

10. Gas bearing pumps and motors.

11. Theoretical and computational studies relative to optimization of plant performance, such as information permitting the determination of plant operating parameters for given feed, waste and production conditions.

12. Theoretical studies of plant operation relative to separation of any isotopes.

13. New plant design considerations.

14. Stabilizing procedures, conditioning techniques, and specific methods actually used for protecting metal surfaces by fluorine.

15. Theoretical investigations and experimental data revealing critical masses. Ordinarily this will have a very limited distribution, and in some cases will be classified Top Secret.

Confidential.

1. Pressure level in any stage except on routine repetitive log sheets.

2. Power expended in operation of the plant.

3. Pumps and valves employed or reasonably employable for handling UF_6.

4. Capacity or size of any compressor, filter, pump, blower, motor, valve, piping or flow meter used in operation of the cascade.

5. Details of instrumental control of the cascade, although specific instruments may be declassified.

6. Procedures for recovering porosity in plugged converters.

7. Effect of UF_6 on materials of construction.

8. Thermal diffusion method as applied to UF_6.

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9. All engineering and technical research and development work relative to the problems of K-25 and other installations carried on at K-25 and not classified Top Secret or Secret.

ELECTROMAGNETIC PLANT.

Top Secret.

1. Combined operational schedules and comprehensive plans interdependence of the Y-12 and other production installations (particularly feed and product transfers and product metal production).

Secret.

1. Research and development on critical electromagnetic plant equipment and processes (namely, filaments, ionization chambers, accelerating system, ion receivers, magnetic fields, etc.).

2. Research and development on critical equipment and processes employed in the production of stable isotopes.

3. Number of samples, assay data and results, etc. on uranium processing.

4. Experimental details, calculations, and results of critical mass investigations.

5. Operating data, capacities, design, and process development relative to the chemical separation, purification, or recovery of uranium as now employed or reasonably contemplated.

6. Specifications of charge materials as to required chemical purity.

7. Operational details such as pressures, accelerating voltage, magnetic field, ion currents, and J temperature to calutron production of U-235.

8. Suitably coded top product assay when employed in routine production transfer.

Confidential.

1. Names and formulas of uranium compounds employed in, or produced by, any stage of plant operation.

The items listed below should serve as a partial guide to declassifiable information as defined in the current Declassification Guide:

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1. Availability and assay of stable isotopes (as well as material itself) produced in the calutron.

2. Research on new assay equipment and techniques for uranium as well as stable isotopes.

3. Fundamental chemistry of uranium and its compounds (e.g., distribution coefficients for solvent extraction, reaction kinetics, vapor pressures, new compounds, solubilities, dissociation constants, etc.)

4. Basic data on emission, absorption, X-ray, and fluorescent spectra of uranium and its compounds.

5. New analytical methods (not critical to production control) for determination of uranium or other elements.

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