

Chapter 5.

DECLASSIFICATION OF ATOMIC-ENERGY INFORMATION

INTRODUCTION

Classification of “atomic-energy information” [Restricted Data and Formerly Restricted Data (RD and FDR)] was described in the previous chapter. Before classification and declassification principles are discussed, it is useful to review the history of declassification of atomic-energy information. This history is particularly important because within the Manhattan Project all atomic-energy information was “born classified,” and it was only when declassification of some of this information was considered, near and shortly after the end of World War II (WWII), that much thought was given to the principles of either classification or declassification of atomic-energy information. However, when the first declassification principles were established, they were developed by some of the top scientists working on the Manhattan Project. The initial declassification policies even required the approval of President Truman!

This chapter discusses, in three separate sections, declassification of atomic-energy information. Those sections cover declassification in the Manhattan Project, declassification under the Atomic Energy Act of 1946, and declassification under the Atomic Energy Act of 1954. Historical aspects are broadly covered with respect to the Manhattan Project and the early years of the atomic Energy Commission (AEC) because much of that information is in documents not readily available to most persons. A final section to this chapter describes some major document-declassification review programs carried out since 1954 that concerned RD and FRD.

DECLASSIFICATION IN THE MANHATTAN PROJECT

The first “declassification” of atomic-energy information occurred when a uranium atomic bomb was dropped on Hiroshima.* The second declassification occurred when the plutonium bomb

* When an atomic bomb was dropped on Hiroshima, Japan, that event indicated that an atomic bomb would work. From the standpoint of protecting information about a breakthrough in a technology, the knowledge that something can be done may be as important as a description of how it can be done. Also, analysis of debris from the event would reveal that the bomb was made from uranium-235.

In that regard, it is interesting to note the following remarks by Gen. L. R. Groves at a hearing before a House of Representatives committee in October 1945:

“The big secret was really something that we could not keep quiet, and that was the fact that the thing [atomic bomb] went off. That told more to the world and to the physicists and the scientists of the world than any other thing that could be told to them. It was something that we did not know until we had spend almost \$2,000,000,000 and had worked about three years. We did not know whether it would go off or not, and that is the thing that really told them more than anything else that could be told” (U.S. Congress, House of Representatives, Committee on Military Affairs, “Atomic Energy,” Hearings on H.R. 4280, An Act for the Development and Control of Atomic Energy, Oct. 9 and 18, 1945, 79th Congress, 1st Sess., 1945, Testimony of Gen. L. R. Groves at p. 12).

L. Szilard expressed a similar opinion at those same hearings when he stated that half of the scientific secrets with respect to the atomic bomb were disclosed when the bomb was used and half of the remaining secrets were disclosed in the Smyth Report. His opinion was that the only secrets left were engineering “know-how” (*idem*, pp. 80, 92).

was dropped on Nagasaki (the event revealed that plutonium could be used as the fissile material in a nuclear weapon). The third declassification occurred when the Smyth Report¹ was published. The Smyth Report was a general account of all the U.S. work related to the development of atomic energy as directed toward the production of atomic bombs during WWII. To guide the preparation of the Smyth Report, General L. R. Groves, head of the Manhattan Project, directed that a set of “classification rules” be prepared. Those rules were developed by R. C. Tolman, one of General Groves’ scientific advisors, and H. D. Smyth, a scientist on the project and the author of the Smyth Report. The classification rules were approved by J. B. Conant, Chairman of the National Defense Research Committee and another of General Groves’ scientific advisors.² Presumably, those classification rules also required the final approval of General Groves.* To be included in the Smyth Report, information had to satisfy at least one requirement in each of three categories established by Smyth and Tolman:³

I. (A) That it is important to a reasonable understanding of what had been done on the project as a whole or (B) That it is of true scientific interest and likely to be truly helpful to scientific workers in this country and

II. (A) That it is already known generally by competent scientists or (B) That it can be deduced or guessed by competent scientists from what is already known, combined with the knowledge that the project was in the overall successful or

III. (A) That it has no real bearing on the production of atomic bombs or (B) That it could be discovered by a small group (15, of whom not over 5 would be senior men) of competent scientists working in a well-equipped college lab in a year’s time or less.

Information concerning actual construction of an atomic bomb was excluded from the report.[†]

The Smyth Report was released to the public on August 11, 1945,⁴ after atomic bombs were dropped on Hiroshima (August 6) and Nagasaki (August 9). That report was thoroughly reviewed by the major Manhattan Project participants before its release, with the final review by R. C. Tolman and H. D. Smyth.^{5,6} Final release approval for that report was by President Truman.⁴ The release was

H. C. Urey stated comparable conclusions: “When the [atomic] bomb exploded, the most important fact was known. From that point on, any foreign country could move with confidence, and this is a great advantage; whereas we had to feel our way along on this problem, set up many alternative methods for doing this work, follow many lines of research, many of which were discarded” (U.S. Senate, Special Committee on Atomic Energy, “Atomic Energy,” Hearing Pursuant to S. Res. 179, Part 1, Nov. 27–30, Dec. 3, 1945, 79th Cong., 1st Sess., Testimony of Dr. H. C. Urey, p. 85).

* In 1946, General Groves’ recollection was that the classification rules for the Smyth Report were drawn up by him, in consultation with others, including Drs. Bush, Conant, and Tolman. He also stated that those rules were later formally approved by the Secretary of War (Gen. L. R. Groves, in “Atomic Energy Act of 1946,” Hearings Before the Special Committee on Atomic Energy, U.S. Senate, 79th Cong., 2nd Sess., on S. 1717, A Bill for the Development and Control of Atomic Energy, Part 4, Feb. 18, 19, and 27, 1946, U.S. Government Printing Office, Washington, D.C., p. 480).

† The Smyth Report was prepared and issued for several reasons. One purpose was to provide a record of Manhattan Project activities, giving credit to the appropriate individuals and organizations. Also, it was realized that, once an atomic bomb had been dropped on Japan, there would be much pressure from press and politicians for more information. Persons in the Manhattan Project would be eager to provide information. The Smyth Report would establish the information that could be released and make it easier to preserve secrecy on the remaining classified information. A final reason for issuing the Smyth Report was to provide information to U.S. citizens to help them reach informed decisions concerning atomic energy (R. G. Hewlett and O. E. Anderson, Jr., *The New World, 1939/1946*, The Pennsylvania University Press, University Park, Pa., 1962, pp. 400, 407; L. R. Groves, *Now it Can Be Told*, Harper & Brothers, New York, 1962, pp. 348–350; V. C. Jones, *Manhattan: The Army and the Atomic Bomb*, United States Army in World War II, Special Studies, Center of Military History, United States Army, Washington, D.C., 1985, pp. 556–562).

also previously approved by the British, through J. Chadwick, Chief of the British Scientific Group assigned to the Manhattan Project.^{*,†}

Comprehensive guidelines for declassifying atomic-energy information were established shortly after the end of WWII. In early November 1945, General Groves asked R. C. Tolman to draft a declassification policy for the Manhattan Project. Dr. Tolman assembled a seven-member committee (all scientists), which consisted of R. F. Bacher, A. H. Compton, E. O. Lawrence, J. R. Oppenheimer, F. H. Spedding, H. C. Urey, and himself.^{7,‡} All members except A. H. Compton attended the Committee on Declassification's first meeting, held at Pasadena, California, on November 13-14, 1945. The Committee's first report to General Groves was dated Nov. 17, 1945.⁸

The Committee on Declassification, also known as the Tolman Committee, stated the following as its general philosophy:

In accordance with your [Gen. Groves's] directive the Committee has considered the effect of release of information both on the national welfare and on the national security. In the interest of national welfare it might seem that nearly all information should be released at once. In the interest of national security a superficial consideration of the problem might lead to the conclusion that very little information should be released.

It is not the conviction of the Committee that the concealment of scientific information can in any long term contribute to the national security of the United States. It is recognized that at the present time it may be inevitable that the policy of the Government will be to conceal certain information in the interest of national security. Even within this limitation there are many matters whose declassification would greatly help the progress of science without violating that policy. If we are looking to the national welfare or national security as they may be two decades from now the Committee has no doubt that the greatest strength in both fields would come from a completely free and open development of science.

Thus, the Committee is inclined to the view that there are probably good reasons for keeping close control of much scientific information if it is believed that there is a likelihood of war within the next five or ten years. It is also their view, however, that this would weaken us disastrously for the future—perhaps twenty years hence.⁹

* J. Chadwick was initially concerned about releasing the Smyth Report but later agreed that its release "may well be necessary in order to maintain security of the really essential facts of the project" and that it should be released. He noted that, although it would be useful to foreign governments interested in atomic development, he estimated that it would not save them more than 3 months' time in their efforts [Andrew Brown, *The Neutron and the Bomb* (A biography of Sir James Chadwick), Oxford University Press, Oxford, England, 1997, p. 295; Leslie R. Groves, *Now It Can Be Told*, Harper & Brothers, New York, 1962, pp. 350-351].

† David Lilienthal, first chairman of the Atomic Energy Commission, commented at the Senate hearings on his confirmation, that release of the Smyth report was a serious authorized breach of security (Richard G. Hewlett and Francis Duncan, *Atomic Shield*, U.S. Atomic Energy Commission, Washington, D.C., 1972, pp. 3-4). President Eisenhower expressed the opinion that the Smyth Report gave away "too many details, to no useful purpose" (even though he knew that H. Smyth was in the room when he was expressing this opinion) (Richard G. Hewlett and Jack M. Holl, *Atoms for Peace and War, 1953-1961*, University of California Press, Berkeley, Calif., 1989, p. 14).

‡ Such atomic-energy expertise has probably never subsequently been assembled on one classification committee. Compton was head of the plutonium project, Lawrence headed uranium enrichment by the calutron method, Urey headed uranium enrichment by all other methods and was also in charge of deuterium production, Oppenheimer was head of atomic weapon development and production, Spedding was head of the project to prepare uranium metal, Bacher was an atomic weapons expert, and Tolman had broad knowledge of all aspects of the Manhattan Project. The first three mentioned, Compton, Lawrence, and Urey, were Nobel Prize recipients.

The Tolman Committee's report listed the following positive and negative criteria for declassification and transmission of information:

Positive Criteria

1. Advancement of general science
2. Advancement of nonmilitary aspects of nuclear science
3. Advancement of military aspects of nuclear science
4. Advancement of general technology
5. Advancement of nonmilitary aspects of nuclear technology
6. Advancement of military aspects of nuclear technology
7. Information already substantially known outside project
8. Information readily obtainable by theory or minor experimentation

Negative Criteria

1. Disclosure would jeopardize U. S. military security
2. Disclosure would weaken U. S. position in international discussions
3. Disclosure would jeopardize patent position¹⁰

The Tolman Committee considered as a possible positive criterion "information that cannot be kept secret" but concluded that this was not a proper criterion.¹¹ A possible negative criterion was "disclosure would not give fair credit to different workers." However, the committee decided that this also was not appropriate.¹² The committee stated that the relative importance of the criteria would change with time, as follows:¹³

1. As experience is gained in declassification
2. As the state of general knowledge in the field changes
3. As the state of the art changes
4. As the international situation changes and as the formulation of policy by the government progresses

Starting with a list of topics that encompassed the six major research and production activities of the Manhattan Project,^{*} the Tolman Committee assigned each topic to one of three categories: immediate declassification, possibilities for declassification, and not recommended for declassification.[†] They suggested that this list be used as a "Declassification Guide." However, they

* The six activities were "General," "Electromagnetic Process," "Diffusion Process," "Plutonium Project," "Military Utilization Project," and "Medical Information" (R. C. Tolman, R. F. Bacher, A. H. Compton, E. O. Lawrence, J. R. Oppenheimer, F. H. Spedding, and H. C. Urey, "Report of the Committee on Declassification," Memorandum to Maj. Gen. L. R. Groves, November 17, 1945, pp. 7-13).

† The complete description of the three categories is as follows: "Class I: Information recommended for immediate declassification. Class II: Information whose declassification would conduce to the national welfare and to long term national security, so that the date of declassification should depend on estimates as to the probability and imminence of war. Class III: Information not at present recommended for declassification, and whose declassification should await a real reduction in the threat of atomic warfare. Class I includes basic scientific information which has little direct application to the problems of production or military utilization. Class II includes certain basic scientific information which would be of great value to the development of science but which has a direct bearing on production or military utilization. It also included technological information which would be of great importance for the peacetime utilization of atomic energy but which also has importance for production or military utilization. Class III includes information which has immediate application to the problems of military utilization but for the most part has little application to the development of science or to peacetime utilization. Included in this class are statements with regard to production capacities, amounts

recommended that this guide not be generally distributed in its entirety since it gave an overall picture of the project; declassifiers should get only the part of the guide that they needed for their particular declassification work (a continuation of the “compartmentalization” policy).¹⁴

The Tolman Committee also suggested some declassification procedures. It recommended that a declassification organization include (1) directors of organizations originating documents to be considered for declassification, (2) “Responsible Reviewers” who would review documents in their field of expertise, and (3) a “District [Manhattan District, United States Engineer Office] Declassification and Transmission Office.”¹⁵ Prior to declassification, each document would be reviewed independently by the originating organization’s director* and by a Responsible Reviewer to ensure that it was declassifiable and that publication would not adversely affect the government’s patent position.¹⁶ The Tolman Committee’s intention was “that the principal responsibility for declassification recommendations should rest with the Responsible Reviewer.”¹⁷

The major responsibilities of the “District Declassification and Transmission Office”[†] were (1) to declassify documents based on the certifications from organization directors and Responsible Reviewers, (2) to establish “suitable checks” to ascertain whether declassification was proceeding according to the rules, (3) to make sure that the declassification process was proceeding promptly and efficiently, and (4) “on the basis of an overall view to make sure that appropriate material in all fields is declassified as expeditiously and completely as possible in order to secure the maximum benefits to be derived from its wider use.”¹⁸

In late December 1945 the Tolman Committee met in Wilmington, Delaware, and New York City to obtain declassification suggestions from representatives of 12 corporations that played major roles in the Manhattan Project. The Committee also met with General Groves on December 29, 1945.

The Committee on Declassification issued its second report on January 20, 1946, and its third and final report on June 21, 1946. The Committee’s views on declassification were made public via a press release, “Statement of Recommendations on Release of Atomic Project Information,” which was issued on February 4, 1946.¹⁹ The second and third Committee reports did not significantly expand on the proposed declassification philosophy or policy but mostly provided additional specific recommendations concerning the scientific and technical matters under consideration for declassification. One interesting feature of the *Second Report of Committee on Declassification* was a recommendation concerning declassification of the Manhattan Project’s routine business correspondence and other non-technical documents.²⁰ The Committee suggested that

of active material on hand, present output of bombs, stock pile of bombs, etc. This inclusion in Class III is made in order to reserve to the President and the Congress the formulation and disclosure of national military policy” (R. C. Tolman et al., “Report of Committee on Declassification,” Memorandum to Maj. Gen. L. R. Groves, Nov. 17, 1945, pp. 4-5).

* Those directors later were designated “Coordinating Organization Directors.”

† The suggested name, “District Declassification and Transmission Office,” probably originated because of the Tolman Committee’s concerns on efficient sharing of certain classified information among the Manhattan Project sites. During most of the Manhattan Project, compartmentalization rules prevented much sharing of classified information. The Tolman Committee’s first report included a section titled “Mechanism for Transmission of Classified Information,” which gave their recommendations on procedures for sharing classified information. Classified information falling into certain categories could be shared among specified major units of the Manhattan Engineering District (MED) without approval of the District Declassification and Transmission Office. Classified information would be transmitted outside the MED only with the approval of the District Engineer (R. C. Tolman, et al., “Report of the Committee on Declassification,” Memorandum to Maj. Gen. L. R. Groves, November 17, 1945, pp. 16-17).

recommendations for declassification of those materials should originate with the director of the organization involved and then should be acted upon by a commissioned officer, who would be assisted by technically trained enlisted men or technically trained civilians. Declassification approval of those non-technical documents by a Responsible Reviewer would not be required, as was the case for declassification of scientific and technical information.

After receiving the approval of Secretary of War Patterson and President Truman to proceed with declassification according to the policy developed by the Tolman Committee,²¹ General Groves directed that a declassification guide be prepared. This declassification guide (classified), dated March 30, 1946, described information declassified according to the Tolman Committee's recommendations and information that the Committee did not declassify. Since the declassification policy incorporated in this guide had been approved by the highest level of government, this guide represented the national policy on declassification of atomic-energy information.

In April 1946, the Manhattan Project declassification organization began operations. The "Manhattan District Declassification and Publications Office," the equivalent of the Tolman Committee's recommended "District Declassification and Transmission Office," was established at the Manhattan Engineer District's (MED) headquarters in Oak Ridge, Tennessee. The declassification function was organizationally located in the Manhattan Engineer District Research Division in Oak Ridge.²² Lt. Col. W. S. Hutchinson was appointed MED District Declassification Officer by the District Engineer. A *Manual for the Declassification of Scientific and Technical Matters*,^{*} dated May 1, 1946, was prepared and issued, with the procedures scheduled to go into effect by May 30.²³

Declassification was to be by document, via a three-step process, rather than by "fields of activities."^{†,24} First, the document was examined by a Coordinating Organization Director.[‡] If that director found that the document could be declassified and that its release would not adversely affect the Government's patent position, then it would be sent to a Responsible Reviewer[§] selected by that director. If the Coordinating Organization Director and the Responsible Reviewer disagreed about the declassification of a document, then the document was sent to a Senior Responsible Reviewer^{**} whose decision was final. If the Coordinating Organization Director and the Responsible Reviewer agreed that a document could be declassified, the Coordinating Organization Director recommended a disposition of the document to the District Declassification Officer. The final decision on

* Declassification of matters not scientific or technical in nature was by other procedures.

† This policy was in contrast to the declassification policy recommended in July 1945 to the Army and the Navy by the Office of Scientific Research and Development (OSRD) for OSRD work for those services. The OSRD recommended declassification by broad fields of research, with exceptions in certain fields to allow declassification of individual projects. The Army adopted this recommendation in November 1945 and provided declassification guidance to the OSRD based on fields of research. The Navy, however, declassified the OSRD work via a declassification decision on each report (I. Stewart, *Organizing Scientific Research for War*, Little, Brown and Co., Boston, 1948, pp. 296-298).

‡ Coordinating Organization Directors were appointed by the MED District Engineer to act for specified sections of the Manhattan Project. Each Coordinating Organization Director was responsible for declassification activities for one or more prime contracts. For large contracts covering more than one project phase, more than one Coordinating Organization Director might be appointed.

§ Responsible Reviewers were appointed by the MED District Engineer to review documents with subject matter in the Reviewer's particular field of expertise. The Responsible Reviewers had the primary responsibility for declassification recommendations.

** In addition to resolving conflicting declassification opinions, the Senior Responsible Reviewers were responsible for maintaining equitable levels of declassification within the scientific fields (chemistry, physics, etc.) in their phase of the Manhattan Project and for ensuring that an equitable level of declassification was maintained throughout the entire project (R. J. Batson, Office of the District Engineer, Manhattan Project, letter to R. C. Tolman, October 23, 1946).

document declassification was by the District Declassification Officer. A document was declassified when the reviews described earlier “clearly indicated that the information in the document fell in the category of safely releasable material as defined in a Declassification Guide” prepared by the Committee on Declassification.²⁵

Six different declassification guides* were prepared and distributed to Coordinating Organization Directors and Responsible Reviewers. Consistent with the recommendations of the Tolman Committee, those directors or reviewers were issued only the declassification guides appropriate to their needs. Other persons could also obtain copies of the guides applicable to their fields of work so that they could more easily prepare documents for declassification.

Shortly after the MED declassification organization started operations, a Committee of Senior Responsible Reviewers was established to assist in clarifying declassification policy decisions and in carrying out the declassification process. This committee provided high-level classification advice that could no longer be quickly provided by the Tolman Committee, whose members had more urgent duties. One reason this advice was needed was that, in the early phases of declassifying Manhattan Project documents, the Army required the classification guide to be “rigidly” applied. That is, if the guide did not specifically state that an item of information was unclassified, the Army would not allow its publication. Several of the project’s scientists believed that this restriction was contrary to the intent of the guide, which was to provide broad guidance and to leave details to the judgment of the Responsible Reviewers. This concern was expressed to Col. K. D. Nichols, Manhattan Project District Engineer.[†] The matter was shortly resolved to ensure that the judgment of the Responsible Reviewer was an essential part of the declassification process.[‡]

Four Senior Responsible Reviewers were appointed in July 1946: W. C. Johnson (atomic “piles”); W. F. Libby (gaseous diffusion); R. L. Thornton (electromagnetic separation); and J. H. Manley (weapons). This Committee of Senior Responsible Reviewers held its first meeting in Berkeley, California, on August 12-14, 1946. Included on the agenda was an evaluation of proposed changes to the March 30, 1946, declassification guide. The committee’s report to General Groves, transmitted by letter dated August 23, contained the following noteworthy item:

* Those guides were *Declassification Guide for General Use*, *Declassification Guide for Electromagnetic Process*, *Declassification Guide for Diffusion Process*, *Declassification Guide for Plutonium Project*, *Declassification Guide for Military Utilization Project* (weapons), and *Declassification Guide for Responsible Reviewers*. Sections I and II of those guides contained topics for immediate declassification that were the same for all six guides. Section III, found in all the guides, contained topics applicable to several or all phases of the Manhattan Project which were not to be declassified. Sections IV and V dealt with topics not to be declassified. Each guide had different topics in Sections IV and V, which were specific to the phase of the project to which the guide applied. The guide for the Military Utilization Project was the most complete guide, containing all the information contained in all other guides (A. P. Donnell, *Transmittal of Declassification Guide For Responsible Reviewers*, Army Service Forces, United States Engineer Office, Manhattan District, Oak Ridge, Tennessee, 1946).

[†] “[The Declassification Guide] can either be a body of law which specifically covers every possible point in which case no scientific or policy background is required for its application, or it can be truly a guide in the sense that it provides the basis for the consistent application of the judgment of competent individuals” [Letter, J. H. Manley (a Responsible Reviewer) to Col. K. D. Nichols, July 11, 1946].

[‡] Col. Kirkpatrick, Deputy District Engineer, provided assurances that scientific and technical competence was indeed required for reviewing documents. “Review of scientific documents by Responsible Reviewers and Coordinating Organization Directors will always require a high degree of professional competence to determine that the definition of releasable information given in the Declassification Guide has been met.” The policy was to have “the widest possible dissemination of scientific information where this can be done without prejudice to the national security” (letter from Col. E. E. Kirkpatrick, Deputy District Engineer, to J. H. Manley, July 22, 1946).

7. We wish to emphasize that it is our opinion that:
 - a) The facts of nature cannot long be kept as classified information,
 - b) To attempt to do so even for the relatively short time of a year or two is not conducive to the national welfare.

By October 23, 1946, General Groves had considerably revised and extended the duties and responsibilities of the Senior Responsible Reviewers.* They were granted authority to recommend declassification actions and appropriate changes to the Declassification Guides. Those recommendations could either be made directly to the District Declassification Officer (minor changes) or to the District Declassification Officer (important changes) through (1) Dr. Tolman, (2) a member of the Declassification (Tolman) Committee, or (3) a competent authority in the particular field (e.g., the director of the laboratory concerned).²⁶

About 500 documents were declassified by the end of 1946,²⁷ at which time the Army's responsibilities for operation of the Manhattan Project's facilities were transferred to the AEC.

DECLASSIFICATION UNDER THE ATOMIC ENERGY ACT OF 1946

On January 1, 1947, the AEC became responsible for controlling atomic-energy information in the United States as provided by the Atomic Energy Act of 1946.²⁸ The U.S. atomic-energy policy was in Sect. 1(a) of that Act.

Accordingly, it is hereby declared to be the policy of the people of the United States that, *subject at all times to the paramount objective of assuring the common defense and security*, the development and utilization of atomic energy shall, so far as practicable, be directed toward improving the public welfare, increasing the standard of living, strengthening free competition in private enterprise, and promoting world peace [emphasis added].

Thus the Act explicitly stated that the "common defense and security" of the United States was the paramount factor with respect to atomic-energy matters.

Section 10(a) of the Act gave the nation's policy for the control of atomic-energy information.

* The Committee of Senior Responsible Reviewers (designated the Committee of Senior Reviewers in 1952) continued under the AEC, serving as part of the classification system throughout the existence of the AEC. Its membership was increased to six in 1952 and to eight in 1962. During its existence, this committee was the AEC's principal scientific and technical advisor on classification matters. The Committee of Senior Reviewers was abolished during the transition from AEC to the Energy Research and Development Administration in 1975 and to the Department of Energy in 1977. In 1978, the Technical Evaluation Panel (TEP) was established to provide technical expertise to assist the Assistant Secretary for Defense Programs (ASDP) in discharging his duties and responsibilities for the classification and declassification of information related to DOE nuclear programs (Technical Evaluation Panel charter, Sect. II, May 4, 1978). The TEP was to consist of one representative each from the three weapons laboratories (Los Alamos Scientific Laboratory, Sandia Laboratory, and Lawrence Livermore Laboratory) and at least one representative from a DOE prime management or operating contractor which was not a weapons laboratory. The ASDP representative on the panel was to be the Director of the Office of Classification.

It shall be the policy of the [Atomic Energy] Commission to control the dissemination of restricted data in such a manner as to assure the common defense and security. Consistent with such policy, the Commission shall be guided by the following principles:

- (1) That until Congress declares by joint resolution that effective and enforceable international safeguards against the use of atomic energy for destructive purposes have been established, there shall be no exchange of information with other nations with respect to the use of atomic energy for industrial purposes; and
- (2) That the dissemination of scientific and technical information relating to atomic energy should be permitted and encouraged so as to provide that free interchange of ideas and criticisms which is essential to scientific progress.²¹

Section 10(b)(1) defined Restricted Data (RD), gave the AEC the authority to declassify RD, and set the standard for such declassification:

The term “restricted data” as used in this section means all data concerning the manufacture or utilization of atomic weapons, the production of fissionable material, or the use of fissionable material in the production of power, but shall not include any data which the Commission from time to time determines *may be published without adversely affecting the common defense and security*.²¹ (emphasis added)

Note that declassification required approval by the five-member AEC and therefore was not an action to be taken lightly.

The standard for declassifying RD, that such an action would not “adversely affect the common defense and security,” was exacting. At that time, it was difficult to determine that publication of atomic-energy information, particularly scientific or technical information, would not be of some help to an adversary. The AEC’s second Director of Classification indicated that it was hard to reach a conclusion that declassification of an item of information would not adversely affect the common defense and security.²⁹

The AEC reaffirmed and continued to implement the MED’s declassification policy established by the Tolman Committee.^{30,31} The Public and Technical Information Service was established by the AEC in late 1947 to control and disseminate atomic-energy information.³² This organization was responsible for ensuring that information was properly controlled (classification and declassification) and that documents (classified and unclassified) were efficiently distributed (“standard” distribution lists were prepared to help distribute classified documents*). The Declassification Branch of the Public and Technical Information Service was responsible for declassification matters. During 1947, about 120 scientists and engineers served as reviewers and recommended the declassification of more than 1000 documents from a group of about 1200 that

* This may have been instituted as a precaution against the rigid compartmentalization of information that existed during the Manhattan Project.

were reviewed.³³ At that time, the AEC's declassification program was administered entirely by scientific personnel.³⁴

The AEC Declassification Branch began to issue Declassification Information Bulletins early in its existence. Bulletin No. 1 was issued on February 13, 1947. Bulletin No. 2, March 20, 1947, stated that releases of information in any foreign country after March 30, 1946 (the date of the initial Declassification Guide), could not be used as authority for declassification of certain topics.

During 1948, the AEC approved a plan for distributing, to persons within the "National Military Establishment" who had only military clearances, certain information (Type B RD) dealing principally with the military's use of atomic weapons, as contrasted to information on the design, development, and production of those weapons.³⁵ This Type B RD was to be treated as defense information (the equivalent to the classified national-security information currently defined in Executive Order 12958). A *Classification Guide for the Military Application of Atomic Energy* was prepared that differentiated between "regular" RD and Type B RD. To assist in determining the RD that could be placed in the Type B category and in other atomic weapons classification matters, a Weapons Effect Classification Board was established,³⁶ which met at Los Alamos on August 13, 1948, with Norris E. Bradbury, Director of the Los Alamos Scientific Laboratory, as Chairman.

Directors of contractor laboratories were authorized to release unclassified reports in certain fields of research under procedures adopted in 1948.^{37,38} If those directors determined that the reports contained no RD, then those reports did not have to be sent to AEC's declassification organization prior to release. The classification guide, *Guide to Unclassified Fields or Topics of Research*, described those areas of research where there was "low probability" of finding classified information. This classification guide was to be used in conjunction with the March 15, 1948, declassification guide.³⁹ A laboratory or plant had to request and receive specific permission from the applicable AEC Operations Office before research in those fields could be conducted as unclassified.⁴⁰ It appears that a facility's approved list of specific unclassified fields of research was revised each year, as more atomic-energy information was declassified. During 1949, more than half of the published technical papers from AEC laboratories were released in this manner, without formal review by the declassification system.⁴¹

In 1949, the AEC discontinued using the term "Restricted" as a classification level for documents containing technical information.* The following is from a 1949 Oak Ridge National Laboratory bulletin:⁴²

We have been instructed by the Atomic Energy Commission to discontinue using the term "Restricted" as a classification for documents containing technical information. This term is to be used only for administrative purposes.

Documents which contain scientific information which does not fall within the purview of the "Unclassified Fields of Research" should be classified "Confidential" or higher.

* As mentioned in Chapter 2, the classification level "Restricted" was first used by the Army in 1935 (or earlier) as a classification level that was probably intended exclusively for technical information. "Restricted" was eliminated as a classification level on December 15, 1953, when Executive Order 10501 became effective.

Documents presented for declassification should be limited to those classified “Confidential” or higher.

Thus, there would no longer be any documents marked “Restricted-Restricted Data.” Later in 1949, the AEC directed that the classification “Official Use Only” was to be used instead of “Restricted.”⁴³ The use of the classification “Official Use Only” was to be limited to documents that:

- (1) Contain information that should not be disclosed to anyone except for official purposes but which do not warrant a higher classification.
- (2) Do not contain restricted data

The classification marking “Official Use Only” was in effect in the AEC from July 18, 1949, until October 22, 1951.

In mid-1949, the AEC created the Office of the Director of Classification, which included the Declassification Branch of the Public and Technical Information Services.⁴⁴ The Director of Classification was responsible for interpreting AEC-approved rules and guides for declassification and for the “original classification of information.”⁴⁵ Reasons for the organizational change included recognition of the specialized nature of classification and declassification work and the possible conflict of interest when the declassification function was organizationally under the person who was also responsible for promoting the dissemination of atomic-energy information.⁴⁶ This change also reflected increased interest in the problem of secrecy and recognized that “classification (assignment of an appropriate secrecy category) is as important as declassification (release from the restricted data category).”⁴⁷ Organizationally, it appears that the Director of Classification was on the same level as other Division Directors.⁴⁸

Dr. Harold A. Fidler was the first Director of Classification. He left that position in late 1949 to become associate director of the Lawrence Radiation Laboratory at Berkeley, California.⁴⁹ He was succeeded as Director of Classification* by Dr. James G. Beckerley, who was succeeded in 1954 by Charles D. Luke. Subsequent heads of the classification organization have been Charles L. Marshall (1954-1975), John A. Griffin (1975-1979), Robert T. Duff (1979-1984), Esther L. Ellman-Lytle (1984-1986), F. Charles Gilbert (1986-1988), A. Bryan Siebert (1988-1999), and Roger K. Heusser (1999-2000). Joan G. Hawthorne is the current (2002) director of the Information Classification and Control Policy organization, the most recent designation for the “classification office.”

The Coordinating Organization Director (COD) did not have a major role in classification matters after the Office of Director of Classification was established. A 1956 AEC announcement

* In 1952 the Office of the Director of Classification became the Office of Classification. It became the Division of Classification in 1954, the Office of Classification and Technology Policy in 1988, the Office of Declassification in late 1993, and the Office of Nuclear and National Security Information in May 1999. When DOE’s Office of Security was established on November 4, 2001, the Office of Nuclear and National Security Information was divided into two separate entities, the Information Classification and Control Policy organization and the Office of Classified and Controlled Information Review. Most of the traditional functions of a classification office dealing with RD, e.g., declassification policy and guidance, were assigned to the Information Classification and Control Policy organization. The major function of the Office of Classified and Controlled Information Review is to review classified DOE documents for declassification, using the guidance provided by the Information Classification and Control Policy organization, and to ensure that documents generated at DOE Headquarters are properly marked for classification.

stated that CODs were to contact the Division of Classification *only* with respect to “processing of documents for declassification.”⁵⁰

The AEC provided the following summary of its 1949 philosophy on the control of information in its *Seventh Semiannual Report*:⁵¹

CONTROL OF INFORMATION

The Commission has continued to give careful consideration to the basic policies underlying the control of information. The Commission, guided by the pertinent provisions of the Atomic Energy Act, has determined that information should be controlled so as to promote the common defense and security by—

- a) Withholding from those whose objectives may be inimical to the interests of the United States, information which could be used by them to the detriment of this Nation’s security.
- b) Providing adequate information for a vigorous and efficient pursuit of the goals of this Nation’s atomic energy and related programs, in a manner consistent with democratic traditions.

The secrecy classification to be applied to any item of information thus depends upon a balance between the value of that information to inimical interests and the value expected to accrue to the United States through its dissemination.

In its consideration of policies in such matters, the Commission has recognized that the essential assets of the United States in atomic energy, as in other fields, are the ability and experience of industry, the knowledge and enthusiasm of scientists, and the maintenance of momentum in all technical fields. Many of these assets lie outside the Commission’s organization and depend to an essential degree upon scientists, technicians, and industrialists having free access to adequate information.

The importance of accountability to the public must be considered, likewise, in determining information-control policy. In a democracy, the people must be able to judge the action of their representatives and officials, and to pass intelligently on policy. The Commission believes that information about a public enterprise of such magnitude as the atomic-energy program should be withheld only for reasons soundly based upon the common defense and security.

The essential factors in appraising whether particular items of information must be kept secret depend in part on a technical judgment as to the pertinence of the information to the objectives of this Nation’s over-all program. In forming this judgment, the Commission looks to key technical personnel associated with its activities. It also depends on many factors of nontechnical nature such as, for example, matters related to military operations, civil defense, plant protection, or international relations. In this judgment the Commission must obtain the views of competent authorities in its own organization and in other agencies. The Commission recognizes that control of information requires constant exercise of judgment, in the last analysis, by every individual concerned with classified information.

In describing its information-control policy in 1950, the AEC indicated that this policy was guided by three basic principles:

- a) Weapons information, including design, production and stockpiles, should be kept secret.
- b) Basic science should be free except where it is directly related to weapons.
- c) Until international control is attained, there shall be no information exchanged with other nations on the use of atomic energy for industrial purposes.⁵²

For information not falling into those three categories, the AEC used a simple criterion to judge the classification of that information: “Will the release of this information help the United States atomic energy program more than it will help the atomic energy program of a potential enemy?”⁵³

A revision of the declassification guide was issued on November 15, 1950, and the *Guide to Unclassified Fields or Topics of Research* was revised on January 8, 1952. *Classification Procedures for AEC Research Contractors*⁵⁴ was also issued on January 8, 1952. It established criteria for classification and security procedures in off-site research contracts and unclassified on-site research. Those procedures described four categories of research as guides for off-site projects. Category I was clearly unclassified research and there was essentially no chance for development of Restricted Data in this category. Category II included areas that potentially could produce Restricted Data, but since there was no initial intent to do so they could be started as unclassified projects. Category III areas were not listed as unclassified fields of research but information developed in those areas was declassifiable. Category IV areas were classified fields of research, with presumably little chance of generating unclassified information.

At an early date, the AEC cooperated with the United Kingdom and Canada to ensure uniform application of declassification policies with respect to atomic-energy information shared as a result of their combined WWII efforts. The U.S. declassification guide was sent to Canada and the United Kingdom and was subsequently adopted by them.⁵⁵ The first joint meeting on classification by the three nations was in November 1947. As a result of that conference, the *Declassification Guide for Responsible Reviewers* was revised and reissued as the *Declassification Guide for General Application* on March 15, 1948.⁵⁶ Meetings among the three countries were thereafter held on an approximate annual basis, with the sixth meeting held in April 1953⁵⁷ and the tenth meeting held in Ottawa, Canada, in July 1974.

In December 1947, after the November meeting between the U.S., U.K., and Canada on classification matters, those three nations met in Washington to discuss information exchange and uranium-ore allocations. The AEC did not inform the Joint Committee on Atomic Energy (JCAE) on the technical exchange program with the British until the summer of 1948. Implementation of this exchange program was delayed by the U.S. elections of 1948 and by concerns in the Congress and by one or more AEC Commissioners about giving atomic-energy information to the British because such an action was probably prohibited by the Atomic Energy Act. New information-exchange discussions among the U.S., U.K., and Canada occurred in September and November 1949. On February 2, 1950, the AEC learned that Klaus Fuchs, a British scientist who participated extensively in Manhattan Project activities in the United States and subsequently was a major participant in the

British atomic energy project, was a U.S.S.R. spy. This news was a major factor in greatly reducing U.S.-U.K. exchange of atomic-energy technical information.

It is interesting to note that the JCAE, which had Congressional oversight over the AEC, had refused to accept classified information in 1947.⁵⁸ However, when Senator Brien McMahon became JCAE Chairman in 1949, he requested access to classified information.⁵⁹

A discussion of declassification under the Atomic Energy Act of 1946 would not be complete without mentioning the apparently improper use of classification by the AEC, in the 1947-1948 time period, to not declassify documents concerning human radiation experiments conducted by the Manhattan Project. A 1995 report, *Advisory Committee on Human Radiation Experiments - Final Report*, mentioned that AEC program officials directed AEC classification officials not to declassify information on those experiments. Reasons given for not declassifying such information were “public relations,” “public opinion,” “opinion of the medical profession,” “legal suits,” or “because of administrative embarrassment.”⁶⁰ It is not unlikely that similar improper criteria were also used in subsequent years to keep some AEC documents classified.

DECLASSIFICATION UNDER THE ATOMIC ENERGY ACT OF 1954

The desire of our nation’s leaders to make atomic-energy information more accessible to industry (“peacetime uses of atomic energy”) and to the rest of the world (President Eisenhower’s “Atoms for Peace” Program) led to the Atomic Energy Act of 1954.⁶¹ That Act became law on August 30, 1954, and its added emphasis on the peacetime uses of atomic energy* led to the eventual declassification, starting in April 1955, of most information pertinent to civilian nuclear reactor technology. Also under this Act, the AEC established a new clearance category (“L,” limited access) which required only a “national agency check” for access to Confidential RD.⁶² This new category made it easier for U.S. companies to obtain atomic-energy information pertinent to commercial and industrial use of atomic energy, most of which could be placed in the Confidential category under the new classification policy.

The Atomic Energy Act of 1954 did not significantly[†] change the definition of RD:

The term “Restricted Data” means all data concerning (1) design, manufacture, or utilization of atomic weapons; (2) the production of special nuclear material; or (3) the use of special nuclear material in the production of energy, but shall not include data declassified or removed from the Restricted Data category pursuant to section 2162 of this title.⁶³

The Act created a category of atomic-energy information that could be shared with the military under the military’s security clearances (similar to the Type B RD mentioned earlier). By Sect.

* “The dissemination of scientific and technical information relating to atomic energy should be permitted and encouraged so as to provide that free interchange of ideas and criticism which is essential to scientific and industrial progress and public understanding and to enlarge the fund of technical information” [42 U.S.C. Sect. 2161(b)].

† As noted in Chapter 4, “design” was added to the first part of the definition, “fissionable material” was replaced with “special nuclear material,” and “power” was replaced by “energy.”

142(d) of the Act, certain RD could be “transclassified” to another category later designated as Formerly Restricted Data (FRD):

The [Secretary of Energy] shall remove from the Restricted Data category such data as the [Secretary of Energy] and the Department of Defense jointly determine relates primarily to the military utilization of atomic weapons and which the [Secretary of Energy] and the Department of Defense jointly determine can be adequately safeguarded as defense information: *Provided, however*, that no such data so removed from the Restricted Data category shall be transmitted or otherwise made available to any nation or regional defense organization, while such data remains defense information, except pursuant to an agreement for cooperation entered into in accordance with section 2164(b) of this title.⁶⁴

The Act made it easier to declassify RD and also specifically provided for the declassification of FRD:

The [Secretary of Energy] shall from time to time determine the data, within the definition of Restricted Data, which can be published without undue risk to the common defense and security and shall thereupon cause such data to be declassified and removed from the category of Restricted Data.⁶⁵

In the case of Restricted Data which the [Secretary of Energy] and the Department of Defense jointly determine to relate primarily to the military utilization of atomic weapons [FRD], the determination that such data may be published without constituting an unreasonable risk to the common defense and security shall be made by the [Secretary of Energy] and the Department of Defense jointly, and if the [Secretary of Energy] and the Department of Defense do not agree, the determination shall be made by the President.⁶⁶

Restricted Data could be declassified if such action would not cause undue risk to the common defense and security. Under the Atomic Energy Act of 1946, RD declassification required a determination that it could be done “without adversely affecting the common defense and security.”⁶⁷ The “undue risk” test of the 1954 Act was intended to allow declassification of more atomic-energy information.⁶⁸ Note that FRD can be declassified if that action does not constitute “an unreasonable risk to the common defense and security,” which appears to be less stringent than the “undue risk” test for declassification of RD.*

In July 1955, the AEC issued a new *Declassification Guide for Responsible Reviewers*. This guide was expected to enable many Secret reports that were of interest to power reactor industries to be downgraded to Confidential or to be declassified.⁶⁹

On August 23, 1956, the AEC and the Department of Defense issued a new classification guide for their joint use.⁷⁰ A revised *Guide to Unclassified Fields of Research* was also prepared in

* In 1996, the DOE’s General Counsel’s Office examined the distinction between “undue risk” and “unreasonable risk.” That Office concluded, after examining the legislative history of the Atomic Energy Act of 1954, that “Congress did not intend a distinction be made between them.” (*Damage Thresholds for Classified Information*, Memorandum, John L. Gurney to A. Bryan Siebert, U.S. Department of Energy, Washington, D.C., March 19, 1996) However, it is not improbable that Congress could have intended such a distinction. RD is atomic-energy information. RD has a certain statutory declassification standard. FRD is also atomic-energy information, but it is to be treated like “defense information” (e.g., declassified like defense information) except with respect to transmittal to certain foreign entities. The declassification standard for defense information is established by Executive Order and is a different standard than that for atomic-energy information.

1956.⁷¹ In 1956-1957, the AEC began to encourage the preparation of “local” classification guides.⁷² By the end of 1958, about 25 guides to local projects or areas of information had been issued by the AEC.⁷³ Monthly *Classification Bulletins* began to be issued by the Division of Classification in late 1956 to disseminate changes and interpretations to classification guidance rapidly and efficiently.*

On December 5, 1956, the eighth revision of the *Declassification Guide for Responsible Reviewers* was issued.^{74,75} Much information was declassified, primarily “to enable industry to design, construct and operate civilian power reactors and their associated processing plants.”⁴⁹ In February 1957, the AEC decided that more information concerning reactors could be declassified, including some technology acquired during the military-reactor programs.⁴⁷

In January 1958 a joint declassification guide on controlled thermonuclear reactions[†] was approved by the United States and the United Kingdom. On August 30, 1957, those two nations had announced the joint declassification of all research on controlled thermonuclear reactions.⁷⁶

In January 1960, the *Classification Policy Guide* became effective, replacing the *Declassification Guide for Responsible Reviewers*.⁷⁷ Nearly all information on the technology of isolating and handling plutonium was now unclassified and could be used in the power and breeder reactor industry⁷⁸ (and for separating plutonium for nuclear weapons).

A review of classification policy in the weapons field was completed in 1959. No major changes were made, but a new classification guide was approved by the Commission.⁷⁹ In 1960, a gas-centrifuge classification guide was adopted by the AEC. Prior to issuing this guide, the AEC coordinated its gas-centrifuge classification policy with the British, The Netherlands, and the Federal Republic of Germany (FRG). Subsequent “quadripartite” meetings were held on gas-centrifuge classification. In 1972, the three European members (who had formed URENCO, a uranium-enrichment consortium) requested relaxation of centrifuge classification guidance to assist in commercialization of their gas-centrifuge technology. In 1974, the British, The Netherlands, and the FRG declassified some of their gas-centrifuge technology and labeled it “Restricted” information. Access to Restricted information required a clearance, but the clearance requirements were not as stringent as for access to Secret or Confidential information. Later, in 1978, the United States followed a similar course when preparing to construct the Gas Centrifuge Enrichment Plant at Portsmouth, Ohio. The United States declassified some gas-centrifuge information to assist in the construction of that plant (e.g., to lower construction costs) and labeled it “Restricted Use” information. The DOE abolished that designation in 2000, 15 years after the Portsmouth plant was cancelled.

In 1966, the AEC established a classification review panel and initiated a comprehensive and detailed study of classification policy,⁸⁰ which was completed in 1967. The existing classification policy was reaffirmed for the weapons program; the naval reactors program; the nuclear ramjet

* These bulletins were issued beginning with No. 1 on November 9, 1956, and ending with No. 77 in February 1966. In 1966, the Monthly *Classification Bulletin* was replaced with four categories of bulletins: *Weapon and Nuclear Explosive Programs* (WNP), *Production Reactors* (PR), *Isotope Production* (IP), and *Space Programs* (SP). Bulletins in these categories were issued as required, with separate distribution lists for each category.

† In August 1955, the AEC announced that it had been conducting thermonuclear research since 1951 under the code name “Project Sherwood” (U.S. Atomic Energy Commission, *Nineteenth Semiannual Report*, January 1956, pp. 9, 62, 63).

program; the nuclear rocket engine; gaseous-diffusion and gas-centrifuge isotope-separation technologies; and “any other method of isotope separation which achieves a reasonable potential for the practical production of special nuclear material in substantial quantities.”⁸¹ The classification review panel recommended declassification of essentially all information concerning Army compact reactor technology, zirconium-hydride moderated SNAP (Systems for Nuclear Auxiliary Power) reactors, and isotopic heat sources. Those recommendations were implemented by the AEC in 1968.⁸²

By the end of 1972, the only AEC programs that were classified to any significant extent were the nuclear-weapon programs, isotope-separation programs for fissionable isotopes and lithium isotopes, and the naval nuclear propulsion program. All the other programs were either completely or mostly unclassified.⁸³ In 1974, laser fusion and laser isotope separation classification guidance was reviewed and revised.⁸⁴

The AEC was replaced by the Energy Research and Development Administration (ERDA) and the Nuclear Regulatory Commission (NRC) in 1975. Most of the classification of information responsibilities were assigned to ERDA. On October 1, 1977, ERDA became part of the newly created Department of Energy (DOE). The Office of Classification became part of the organization headed by the Assistant Secretary of Defense Programs (ASDP). The ASDP has the declassification authority originally assigned to the five AEC Commissioners.

In 1977-1978, the Office of Classification developed, in coordination with other federal agencies, a nuclear-nonproliferation classification guide.⁸⁵ A major revision to the basic nuclear-weapon-technology classification guide was initiated in 1980. The purpose of this revision was to update classification policy and to provide a more extensive rationale for classification.⁸⁶ In 1983, DOE began to develop detailed “Topical Guides” for specific nuclear-weapon areas.⁸⁷ Several significant downgrading and declassification actions were taken in 1985 for the gas-centrifuge isotope-separation program and again in 1997. In May 1989, nearly all information concerning the gaseous-diffusion uranium-enrichment program was downgraded from SRD to CRD.

In March 1990, the Under Secretary of DOE directed that a comprehensive review of DOE’s Restricted Data (RD) classification policies and procedures be done. The study was carried out by DOE’s Office of Classification, using a small working group, including support contractors. The group’s final report⁸⁸ encompassed RD and FRD, unclassified sensitive nuclear information [e.g., Unclassified Controlled Nuclear Information (UCNI)], and certain aspects of national security information. The thoughtful and well-considered final report of that working group recommended that the RD system be continued, but that changes be made to the Atomic Energy Act (1) to eliminate the FRD category and transfer FRD information to the [classified national security information] category, (2) to allow reclassification of RD under certain conditions, (3) to eliminate privately generated information from the RD category, (4) to better define UCNI, and (5) to allow communication of certain RD to selected nations for nuclear-weapon-nonproliferation reasons. The report also recommended that DOE “conduct a comprehensive, fundamental review of all nuclear weapon-related information to determine what should be classified under present conditions, with the objective of removing from classification all information that no longer warrants protection.” Preparation of a new *Classification Policy Guide* was also recommended, after the fundamental review was completed.

In December 1993, the Secretary of Energy initiated an “Openness Initiative” within DOE to support President Clinton’s call for a more open government. At a press conference on December 7, 1993, the Secretary announced the “largest declassification of information in DOE history.”* Additional major declassifications were announced by the Secretary on June 27, 1994; February 6, 1996; and January 15, 1997.

In the mid-1990s, DOE stated that 100% of atomic-energy-related basic science information had been declassified by 1953; 100% of atomic-energy information related to civilian nuclear-power programs had been declassified by 1959; about 50% of atomic-energy information related to uranium-isotope separation had been declassified by 1989; and that about 50% of the atomic-energy information related to nuclear-weapon technology had been declassified by 1993.⁸⁹ The 1998 DOE regulations on classification and declassification of RD and FRD identify 14 areas of information that are presumed to be unclassified.⁹⁰ Those are the broad areas of atomic-energy information that have been completely, or nearly completely, declassified.

In 1994, the DOE issued *Drawing Back the Curtain of Secrecy - Restricted Data Declassification Policy, 1946 to the Present*.⁹¹ This document (RDD-1) was a compilation of information regarding atomic-energy declassification actions from 1946 to the date of issue. This document has been updated each year since 1994. The updates RDD-2 through RDD-7 have included prior declassification actions (prior to 1994) that were overlooked for inclusion in RDD-1, as well as information on declassifications that occurred after 1994. The most recent RDD document available to the public is RDD-7, dated January 1, 2001. RDD-7 is more than 150 pages long and is available on the Federation of American Scientists World Wide Web site (<http://www.fas.org/sgp/othergov/doe/rdd-7.html>). One or more subsequent RDD documents have been issued, but they are considered to be “Official Use Only” and are not available to the public.

In February 1994, the Secretary of Energy requested the National Academy of Sciences (NAS) to review DOE classification policies and procedures. The National Research Council of the NAS formed the Committee on Declassification of Information for the Department of Energy Environmental Remediation and Related Programs and investigated DOE classification policy and practice. NAS provided a report on these matters to DOE on August 9, 1995.⁹² Major recommendations in this report include: (1) “maintain stringent security around sharply defined and narrowly circumscribed areas, but to reduce or eliminate classification around areas of less sensitivity;” (2) “the burden of proof [for declassification] should be on those who argue for classification, not on those who propose declassification;” (3) “information should be classified only if the damage to national security demonstrably outweighs both the public benefit from the disclosure of that information and the costs of attempting to prevent such disclosure;” (4) DOE’s goal should be “open policies openly arrived at;” (5) DOE should establish “a systematic review of existing documents containing RD;” and (6) DOE should promulgate “a regulation to prohibit abuses of classification under the AEA, comparable to those [regulations] that now exist for other types of classified information” and to do this under established federal procedures (i.e., notice-and-

* Perhaps in terms of volume of information it may have been the largest declassification of atomic-energy information in DOE history. Considering the “value” of the released information to nuclear-weapon proliferators, which is the principal reason that atomic-energy information is classified, the most significant declassification of atomic-energy information probably occurred when the Smyth Report was released to the public. Other significant declassifications include those on fuel-reprocessing technology.

comment rulemaking, which increases accountability because decisions under such regulations are subject to judicial review).*

On December 7, 1993, as part of DOE's "Openness Initiative," the Secretary of Energy announced plans for a comprehensive review of DOE's classification policies concerning defense-related nuclear information. DOE initiated this review on June 17, 1994, with the Office of Declassification (formerly the Office of Classification) as the executive agent for DOE. This was said to be the first major review of atomic-energy classification policy since that policy was established by the Tolman Committee in late 1945 and early 1946.† Although the review was primarily directed at information classified by the Atomic Energy Act (i.e., RD and FRD) and unclassified sensitive information controlled by that Act (i.e., UCNI), it also included safeguards and security information (classified national security information) concerning DOE's programs. The "Fundamental Review" was formally "kicked off" on March 16, 1995, by the Secretary of Energy at a public stakeholder meeting.

The specific purpose of the Fundamental Review was stated as follows:

The purpose of the Fundamental Review is to review the Department of Energy's classification policy with respect to information concerning defense applications of nuclear technology to determine which information requires continued protection, with the objective of promptly releasing all information no longer warranting such protection.⁹³

A major reason for instituting such a review was the end of the Cold War⁹⁴ and, presumably, the reduction in threat to national security from the U.S.S.R. The scope of the review was as follows:

The fundamental review is a basic, systematic and comprehensive review of the Department of Energy's classification policy to establish that information which must be protected, with the intent that all other information can be made available to the public. All information within the Department of Energy's responsibility will be included (Restricted Data, Formerly Restricted Data, and National Security Information). The review will impact the overall Classification Policy Guide and thousands of specific topics in about 50 Headquarters guides and about 800 local classification guides.⁹⁵

The review was carried out by a Fundamental Review Group, later named the Fundamental Classification Policy Review Group, which consisted of a chairman, vice-chairman, and seven working groups in as many subject areas. About 50 persons were carefully selected by the Office of Declassification to be members of the review's working groups. To minimize the burden on participants, each working group met for a limited number (4 to 6) of one-day meetings, focussing

* Recommendations (2) and (3) seem to be not consistent with the Atomic Energy Act of 1954, as amended. That Act explicitly classifies (makes RD) all atomic energy information and imposes a standard other than that in recommendation (3) to declassify that information.

† This comment is probably somewhat of an overstatement because major classification policy reviews had been completed earlier, such as in 1966-1967. Also, as it turned out, the review was not so much about revising DOE declassification policy (remember, RD and FRD are classified by the AEA; DOE only has discretion to declassify RD and FRD) as about reviewing classified information and recommending topics in classification guides for declassification actions.

on revising drafts prepared by the Office of Declassification.* Public comments were actively encouraged.⁹⁶

The unclassified version of the final report of the Fundamental Classification Policy Review Group was dated January 15, 1997, but was not issued by DOE until October 1997. A draft of the unclassified report had been issued for public comment on February 1, 1996.

The final report noted the four aims of DOE classification policy as expressed in DOE's 1993 classification policy guide:⁹⁷ (1) assuring defense and nonproliferation by controlling declassification; (2) promoting peaceful applications of atomic energy by dissemination of scientific and technical information; (3) promoting dissemination of environmental, safety, and health-related information; and (4) promoting technology transfer for U.S. commercial interests.⁹⁸ The 1993 DOE classification policy guide was also said to contain 15 general policy statements that the DOE uses to achieve a balance among those four aims when considering specific classification or declassification actions.⁹⁹

The Fundamental Classification Policy Review Group recommended, instead of the principle of balancing four aims (see above), that DOE use the following 11 general and 10 area-specific principles:¹⁰⁰

General Principles:

1. Public trust can best be held by providing complete and accurate information in a timely manner and ensuring that only information requiring protection is classified.
2. Classification must be based on explainable judgments of identifiable risk to national security and no other reason.
3. Information relating to environmental, safety, and health issues should be classified only when national security requirements clearly outweigh the public's need to know.
4. Classification must never be used to conceal or delay the discovery of violations of law, inefficiency, or errors; to prevent embarrassment; or to restrain competition.
5. Classification policy must be unambiguously related to national policy and enunciated in a manner understandable by the public.
6. Classification guidance must be traceable to classification policy and must provide a clear, unambiguous understanding of what information must be classified.
7. Classification policy and guidance must be reviewed periodically to ensure harmony with national policy and to identify information that can be declassified.
8. Classification policy and practices must honor U.S. international commitments contained in treaties and other agreements and not inhibit authorized cooperation with other countries.

* A skeptic might think that this procedure also minimized the possibility that the participants would significantly change the drafts produced by DOE.

9. Unauthorized disclosure does not necessarily provide a basis for declassification.
10. Information or technology considered obsolete by U.S. standards may still be classified due to its usefulness to terrorists and proliferators.
11. Open communication of fundamental science does not preclude classification of implementing technology.

Nuclear Weapons-Specific Principles:

1. DOE classification is primarily focused on stemming the flow of information that could materially advance the objectives of nuclear proliferators, terrorists, or saboteurs; assist in significantly improving a nuclear weapon capability; or expose a significant vulnerability or defect in U.S. weapons.
2. Classification is a major element in assuring that a U.S. nuclear weapon cannot be used in an unauthorized manner.
3. Classification may delay, but cannot prevent, acquisition of a first-generation nuclear weapon; it can significantly increase the cost and time to develop more advanced capabilities.
4. Information confirming the technical merits of various approaches to nuclear weapon development, detailed nuclear weapon design information, performance data gained from nuclear tests, and information on how test data are used to validate models and databases must be closely guarded.
5. Basic scientific information, not revealing details of weapon design or fissile material production, should not be classified unless there is a compelling reason to believe that disclosure would significantly assist in gaining or enhancing a nuclear capability.

Nuclear Materials Production-Specific Principles:

1. Information that could materially assist a proliferator in producing special nuclear material shall be classified.

Military Reactor-Specific Principles:

1. DOE classification is primarily focused on protecting information that could materially assist potential adversaries in exploiting vulnerabilities in U.S. military reactor systems or in developing or significantly improving military reactors.
2. Information on retired programs is generally obsolete and decisions to retain as classified should only be made on the basis of applicability to current programs.

Safeguards and Security-Specific Principles:

1. Sound risk management approaches should be applied in the decision process to classify safeguards and security information.

2.Safeguards and security information that could result in an adversary obtaining a nuclear weapon or nuclear material, or in nuclear sabotage, or in damage to the health and safety of government employees or the public must be protected.

The Fundamental Classification Policy Review Group recommended changing the Atomic Energy Act to (1) eliminate the “born classified” concept and allow the Secretary of Energy to designate the information that is Restricted Data, (2) allow previously declassified information to be reclassified, and (3) eliminate the FRD category and classify that information as NSI. The Group also recommended portion marking for RD documents, limiting UCNI to safeguards and security information, and using more stringent measures (“higher fences”) for 137 classification topics identified in a classified annex.

Although the review was termed a “fundamental classification policy review,” few classification policy statements resulted. Of the 21 “principles” listed above, only four resemble policy statements: General Principle 3, Nuclear Weapons-Specific Principles 1 and 5, and Nuclear Materials Production-Specific Principle 1.* The review resulted in the declassification of many topics in existing classification guides. Most declassifications were the result of direct recommendations by the review group. In other instances, the review group recommended further study on possible declassifications, which sometimes resulted in declassifications without adequate further study.

The Secretary of Energy established the Department of Energy Openness Advisory Panel in 1996. The purpose of that panel is to provide advice to the Secretary of Energy Advisory Board regarding the current status and strategic direction for the Department’s classification and declassification policies and programs. That thirteen-member panel first met on July 24, 1996.

MAJOR DOCUMENT-DECLASSIFICATION REVIEW PROGRAMS SINCE 1954

Soon after the Atomic Energy Act of 1954 was enacted, the AEC initiated a program to review, for declassification or downgrading, documents containing information of interest to companies interested in commercializing atomic energy, especially with respect to nuclear-reactor information. In succeeding years, other major document-declassification reviews were initiated for that and other purposes. This section provides a brief summary of those programs and the problems associated with some of those review programs.

April 1955 - February 1956

A special review of 30,773 classified AEC research and development reports and internal memoranda was conducted from April 1955 (it was expanded in November 1955¹⁰¹) until February

* A policy statement is something like the following: Retarding the progress of inimical nations is more important than advancing U.S. progress. This was one of five 1974 AEC declassification policy statements (U.S. Atomic Energy Commission, Internal Document, 1974).

1956. Those reports were selected for review because of their potential use in the commercial development of atomic energy. The most recent declassification guide, issued in July 1955, had downgraded or declassified much information about civilian nuclear-power reactors. The new classification guidance in this guide was based on declassifications or downgradings approved at the tripartite classification conference among the U.S., U.K, and Canada held in October 1954 at Harwell, England. The document declassification review, held at AEC facilities in Oak Ridge, Tennessee, was completed by 35 scientists and engineers from AEC-contractor organizations and was supervised by AEC staff. Of the 30,773 Secret reports reviewed, 10,916 were declassified, and 8,574 were downgraded to Confidential.¹⁰²

The specific rules under which this special declassification review operated are not known, but they were different from the then-applicable AEC declassification rules.¹⁰³ Generally, for a report to be declassified, it was first reviewed by the Coordinating Organization Director for appropriateness (to be released) and possible declassification. The report was then reviewed by a Responsible Reviewer, and lastly by the Declassification Branch of the Division of Classification.

Also, during this time, declassifications pursuant to the U.S.-U.K.-Canada declassification agreements of October 1954 made available much of the technical information presented by the U.S. at the (First) International Conference on the Peaceful Uses of Atomic Energy, held by the United Nations in Geneva, Switzerland, August 8-20, 1955.¹⁰⁴ About 11,000 documents were said to have been reviewed for declassification in connection with that conference.¹⁰⁵

1957

A revised declassification guide was issued on December 5, 1956. The nuclear-reactor supplement to that guide specifically declassified nearly all nonmilitary and non-production reactors, and declassified or downgraded much information about specific military reactors. That supplement was further revised in February 1957 to declassify more military-reactor information. Almost all of the basic chemistry and practical technology of reactor fuel preparation and spent-fuel processing was declassified, except for specific processing details on production and military reactors.

On February 11, 1957, the AEC began an expedited review of 18,677 classified technical documents and reports.¹⁰⁶ About 80 scientists, engineers, and classification specialists participated in this review, which was held in Oak Ridge. At any one time, there were about 40 reviewers present. Each reviewer usually participated for 1 to 2 weeks. Of the 18,677 Secret documents reviewed, 9,076 (48.6%) were declassified, and 5,297 were downgraded to Confidential. Initial classification recommendations were made by the reviewers, which were then followed by a second review by Division of Classification staff.

The United Nations Second International Conference on Peaceful Uses of Atomic Energy was held in Geneva, Switzerland, on September 1-13, 1957. Special declassification reviews of documents were held in connection with U.S. participation in this conference. About 10,000 classified documents were reviewed.¹⁰⁷ Also, on August 30, 1957, in Geneva, the U.S. and U.K. jointly announced the declassification of research dealing with controlled thermonuclear reactions.¹⁰⁸

1958

The Division of Classification established special teams to review the classification of documents held by 82 former AEC-contractors whose contracts had expired.¹⁰⁹ About 10,000 classified documents were to be reviewed. About 5,500 had been reviewed by June 1958, of which about 4,500 had been declassified.

1961, 1962, and 1965

It has been said that special document-classification review programs were carried out by the AEC in 1961 and 1962 (about 20,000 documents) and in 1965 (about 22,000 documents).¹¹⁰ However, no additional details on those reviews are available.

1971 to 1978

On July 19, 1971, the AEC initiated the Comprehensive Classification Review Program (CCRP). This program, whose official end date was said to be December 31, 1978,^{*} encompassed a review of many classified documents held in AEC offices or by AEC contractors. During that time, about 2,782,000 documents were reviewed, and about 1,457,000 (52%) were declassified. Most of the documents reviewed were from “inactive” files.

The impetus for the CCRP was the “Pentagon Papers”[†] controversy. The Division of Classification initiated the CCRP to assure that there were no unnecessarily classified documents in the AEC.¹¹¹ Under the CCRP, teams of technical experts and classification experts met at the major AEC and AEC-contractor sites, under the guidance of senior classification personnel, to review documents that had been assembled for team review. Generally, the teams consisted mostly of technical experts who did not necessarily have classification expertise. Reviews sometimes lasted several weeks, with team membership changing during the longer reviews. The technical-expert reviewers sometimes reviewed and declassified documents that were in areas outside their technical expertise. Only one review was required to declassify a document, in contrast to the AEC’s usual two-review requirement. As an example of the pace of the declassification, during a 33-day review at Los Alamos Scientific Laboratory during January and February 1973, 388,092 documents were reviewed by about 25 persons; 234,315 of those documents were declassified.¹¹²

In May 1978, an uncleared person using the unclassified section of the Los Alamos Scientific Laboratory’s (LASL) library, found a mistakenly declassified document in that section.¹¹³ That document had been declassified during the CCRP and was said to contain significant classified nuclear-weapon design information. This led to a DOE decision to re-review all declassified nuclear-weapon reports. About 2000 of those reports were selected for re-review, on the basis of their titles,

^{*} Some AEC documents state that the CCRP started on January 1, 1971, although that date surely seems erroneous. Some AEC documents state that the CCRP ended in 1976. A 1979 General Accounting Office report stated that the large-scale document review program was from 1971 until 1976 (*The Department of Energy’s Erroneous Declassification of Nuclear Weapons Design Documents*, EMD-79-109, Comptroller General of the United States, Washington, D.C. September 21, 1979).

[†] The Pentagon Papers were a 47-volume, top secret Department of Defense study on U.S. involvement in Vietnam. That study revealed serious government mistakes, etc. The study was “leaked” to the *New York Times*, which began publishing articles based on the study on June 13, 1971. The Justice Department obtained a court injunction against further publication, but the U.S. Supreme Court ruled, on June 30, 1971, that the government could not suppress publication of information from that study.

and about 100 were reclassified.

In May 1979, the same person who in 1978 had found the erroneously declassified report found another such report in the unclassified section of the LASL library. At that time, the person was searching for documents, on behalf of the American Civil Liberties Union, that might be relevant to the “Progressive” litigation* then in progress.¹¹⁴

The erroneous declassifications came to the attention of a U.S. Senate subcommittee chaired by Senator John Glenn. In response to a July 12, 1979, request of that subcommittee, the General Accounting Office prepared and issued a report on the “erroneous declassification of nuclear weapon design documents.” The report stated that 6% of the documents declassified at LASL in 1973 were erroneously declassified.^{115,†} DOE has estimated that the overall incorrect CCRP declassifications were between 1% and 3% of the total documents declassified.[‡]

In about mid-to-late 1979, DOE determined that all documents declassified during the CCRP, January 1, 1971 through December 31, 1978, should be re-reviewed for classification and in the interim should be protected as if their original (pre-CCRP) classification was still applicable. The immediate re-review of the CCRP-declassified documents was expanded to include all of the approximately 36,000 declassified documents for which a notice of declassification had been issued by DOE. The approximately 1,400,000 other CCRP-declassified documents would be re-reviewed as necessary.

Re-review of documents “declassified” during the CCRP became part of a major 1993 DOE initiative. In October 1993, the Secretary of Energy initiated an “Openness Initiative.” A significant part of that initiative was to review classified documents for possible declassification and release to the public. A major new document-declassification program was initiated within DOE (see below). To help accomplish the rapid declassification of significant numbers of documents, in December 1993, the Office of Declassification (new name) relaxed (again) DOE’s document-declassification requirements with respect to CCRP-declassified documents. Instead of requiring two classification reviews for a document prior to its declassification, only one declassification review would be required for CCRP-declassified documents. This was the same requirement that was relaxed during the CCRP. This relaxation of the two-review requirement was based on the fact that one declassification review had already been completed during the CCRP.[§]

* In 1979, *The Progressive* magazine tried to publish an article, based on unclassified sources, concerning design of the hydrogen bomb. The government said that this article contained classified information and obtained a preliminary injunction against its publication. Subsequent events were too complex to summarize here, but the government eventually dropped the lawsuit and the article was published in the November 1979 issue of the magazine.

† The GAO report stated that about 30 boxes of documents declassified during the 1973 review at LASL were sent to the National Archives, where they were reviewed by a private historian. That historian became concerned about the contents of some of those documents and called them to the attention of LASL officials. LASL officials then reviewed about two-thirds of those documents and found that about 6% should never have been declassified. This was said to have been called to the attention of DOE Headquarters in 1975.

‡ The GAO report stated that after May 1979, a document-by-document search was made of the shelves of the LASL Library that were open to the public. Fourteen reports clearly marked classified were found. They were said to have been put on the shelves through clerical error. These, and other clerical errors mentioned in the GAO report, are perhaps indicative that clerical errors, as well as declassification errors, may contribute to the overall inadvertent release of classified documents during large-scale reviews of documents for declassification.

§ Although this relaxation seems reasonable because the CCRP review could be counted as one classification review, it should be remembered that many of the CCRP reviewers did not have classification expertise, and some CCRP reviewers declassified

1993 to the Present (DOE Review Programs)

One of President Clinton's goals was to establish a more open government. To support that goal, the Secretary of Energy established DOE's "Openness Initiative" in December 1993. That initiative included review of classified documents for possible declassification and public release. DOE operation offices and contractor organizations were directed to establish large-scale classification-review programs and to make the results of document declassifications available to the public.¹¹⁶ Such programs differed from the CCRP in that DOE's regular document-declassification rules were to apply: A document must be reviewed twice prior to declassification. The first review must be by either an Authorized Derivative Classifier (ADC) or an Authorized Derivative Declassifier (ADD). The second, and final review, must be by an ADD. As established by existing DOE procedures, both ADCs and ADDs were required to have special qualifications and special training, with ADDs having the more-extensive training. From 1994 until February 1997, the number of such large-scale document-declassification review programs had increased from 2 to 20. To date, few problems associated with those large-scale reviews have been discovered. A bibliographic database of declassified DOE documents (OpenNet) has been made available to the public on the Internet.

1993 to the Present (Other-Agency Review Programs Involving RD and FRD)

President Clinton's Presidential Review Directive 29 of April 26, 1993, called for a re-evaluation of U.S. classification and safeguarding systems based on changed national security requirements after the end of the Cold War. More specifically, the Directive established a review of President Reagan's Executive Order (EO) 12356, *National Security Information*. A new EO on security classification of information, EO 12958, became effective on October 16, 1995. That order, which does not apply to RD or FRD, required the declassification of documents 25 years old or older that have permanent historical value as designated by the U.S. Archivist. Governmental agencies, in an effort to comply with EO 12958, reviewed and declassified large numbers of documents. Many reviews were "bulk" declassifications of "file series" of documents; declassification of hundreds of thousands of pages was based only on a sampling of the documents in that file series. Unfortunately, those reviews did not detect some RD or FRD documents included with the non-atomic-energy-related classified documents. Some RD and FRD were found in those declassified documents. Further, some documents were clearly marked as containing RD or FRD but their presence had been overlooked. Some documents contained RD and FRD but were only marked as containing "National Security Information." Other documents containing RD and FRD had no classification markings.¹¹⁷

It appeared to some U.S. Senators, in mid-1998, that "in a frenzied attempt to meet the [declassification] deadline mandated by E.O. 12958, officials are not taking proper care to ensure that Restricted Data and Formerly Restricted Data that may be commingled with other classified information is not being improperly released or scheduled for automatic declassification."¹¹⁸ The Senators also alleged that such problems were known as early as December 1995 or January 1996 but were not corrected. Consequently, Congress passed a law, signed by the President on October 17, 1998, that was directed at ensuring that documents declassified under EO 12958 were adequately

documents that were not within their fields of technical expertise. Therefore, one might question whether the CCRP review was a valid declassification review and perhaps two reviews should have been required for the re-review of CCRP-declassified documents.

reviewed for RD and FRD prior to such declassification. This enactment, Sect. 3161 of the National Defense Authorization Act for Fiscal Year 1999, required that historically valuable records subject to EO 12958 declassification requirements had to be reviewed on a page-by-page basis for RD or FRD unless it was determined that they were “highly unlikely” to contain RD or FRD.

In compliance with Sect. 3161 of the above-mentioned Act, in 1999 DOE reviewed 948,000 pages of documents that had been declassified and released (made publicly available) by other agencies prior to October 17, 1998, the effective date of the Act. That review found 14,890 pages containing RD or FRD.¹¹⁹ A November 29, 1999, report indicated that DOE audits had prevented agency declassification and release of about 22,500 pages of documents containing RD or FRD.¹²⁰ Subsequent DOE audits of about 184 million pages of publicly available records accessioned by the National Archives and Records Administration discovered 654 documents containing RD or FRD that were inadvertently released.^{121 - 123,*}

Epilogue to Major Document-Declassification Review Programs

Perfection (total risk avoidance) in large-scale document-declassification programs is not achievable except under unusual circumstances requiring relatively great expense. Part of the problem with respect to classified atomic energy information is a result of erosion of the “need-to-know” (compartmentalization) requirement, which has resulted in RD or FRD being “gratuitously” included in documents that should not have contained such information (did not *need* to contain such information). For example, a document concerned with nuclear reactor matters might unnecessarily contain non-reactor-related classified information about uranium enrichment or nuclear weapon design. Classification reviewers trained in the expected subject-matter of the document (e.g., nuclear reactors) may not recognize the “gratuitous” RD or FRD (e.g., concerning weapon design) present in the document. Another factor is that sometimes only a very knowledgeable reviewer will be able to identify some of the technical RD (most RD is technical information) in a document, because the technical inferences or associations that reveal the RD are subtle. Finally, there are the inescapable “human errors” in the document declassification review and in the subsequent clerical work to re-mark and re-file the reviewed documents. Consequently, mistakes will be made during major document-declassification review programs that involve millions of pages of classified documents. Thus, it should be expected (acceptance of some risk) that some RD and FRD will erroneously be released in documents that have been marked as declassified during those review programs and that such documents, and the classified information contained therein, will become publicly (and widely) available (and locatable by electronic searches) through media such as DOE’s OpenNet database (available at <http://www.osti.gov/opennet/>).

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¹²¹ *Second Report on Inadvertent Releases of Restricted Data and Formerly Restricted Data under Executive Order 12958 (U)*, DODE/NN-52-002, unclassified summary, December 1999. Available at <http://www.fas.org/sgp/othergov/inadvertent2.html>.

¹²⁰ *Third Report on Inadvertent Releases of Restricted Data and Formerly Restricted Data under Executive Order 12958 (Deleted Version)(U)*, DOE/SO-22-0003 (Deleted Version), May 2001. Available at <http://www.fas.org/sgp/othergov/inadvertent3.html>.

¹²¹ *Fourth Report on Inadvertent Releases of Restricted Data and Formerly Restricted Data under Executive Order 12958 (Deleted Version)(U)*, DOE/SO-22-0004 (Deleted Version), August 2001. <http://www.fas.org/sgp/othergov/inadvertent2.html>.

¹²² *Fifth Report on Inadvertent Releases of Restricted Data and Formerly Restricted Data under Executive Order 12958 (Deleted Version) (U)*, DOE/SO-70-0005 (Deleted Version), November 2001. <http://www.fas.org/sgp/othergov/inadvertent2.html>.

¹²³ *Sixth Report on Inadvertent Releases of Restricted Data and Formerly Restricted Data under Executive Order 12958 (Deleted Version)(U)*, DOE/SO-70-0006 (Deleted Version), February 2002. <http://www.fas.org/sgp/othergov/inadvertent2.html>.