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BUSH-CONANT FILE RELATING TO THE DEVELOPMENT OF THE ATOMIC BOMB, 1940-1945

The Bush-Conant File, reproduced on the 14 rolls of this microfilm publication, M1392, documents the research and development of the atomic bomb from 1940 to 1945. These records were maintained in Dr. James B. Conant's office for himself and Dr. Vannevar Bush. Bush was director of the Office of Scientific Research and Development (OSRD, 1941-46), chairman of the National Defense Research Committee (NDRC) prior to the establishment of OSRD (1940-41), chairman of the Military Policy Committee (1942-45) and member of the Interim Committee (May-June 1945). During this period Conant served under Bush as chairman of the National Defense Research Committee of OSRD (1941-46), chairman of the S-1 Executive Committee (1942-43), alternate chairman of the Military Policy Committee (1942-45), scientific advisor to Maj. Gen. Leslie R. Groves (1943-45), and member of the Interim Committee (May-June 1945). The file, which consists primarily of letters, memorandums, and reports, is part of the Records of the Office of Scientific Research and Development, Record Group (RG) 227.

The Bush-Conant File documents OSRD's role in promoting basic scientific research and development on nuclear fission before August 1942. In addition, the files document Bush and Conant's continuing roles, as chairman and alternate chairman of the Military Policy Committee, in overseeing the army's development of the atomic bomb during World War II and, as members of the short-lived Interim Committee, in advising on foreign policy and domestic legislation for the regulation of atomic energy immediately after the war.

Most of the documents are dated 1940-45, but some items are dated as early as 1939 and as late as 1947. They include correspondence from high-ranking government and military officials and eminent American and British scientists and industrial engineers connected with the atomic bomb project. This project, until it was turned over to the army, was referred to by the code names "uranium," "S-1," or "tube alloys" (the British code name).

These records comprise one of several files in the S-1 records which contain correspondence and technical reports relating to the development of the atomic bomb, 1939-47. The subject matter of the Bush-Conant File relates to scientific and technical problems; research and development (R & D) contracts with universities and private industry and associated fiscal, personnel, and security matters; relations with the British in the Allies' race to develop nuclear weapons before the Germans did; legislation and plans for postwar development and control of atomic energy; and official government policy.

Background

The process of nuclear fission in uranium was discovered by the German scientists Otto Hahn and Fritz Strassman in late 1938 and was experimentally confirmed by Lise Meitner and her nephew, Otto R.

Frisch, Austrian refugees from Nazi rule. They conveyed this information to the Danish theoretical physicist Niels Bohr, who brought this news with him to America in January 1939. On January 26, during the Fifth Washington Conference on Theoretical Physics held at the Carnegie Institution, news of this discovery spread to research centers of physics throughout the nation. Scientists in America immediately focused their attention on the problem of uranium fission and the possibility of a self-sustaining reaction that would release vast amounts of energy. This process, if controlled, might become a new source of heat and power or, if allowed to proceed unchecked, might produce an explosive of tremendous force. By the end of 1939 nearly 100 articles on the subject of nuclear fission had been published by scientists throughout the world.

In the fall of 1939 the Hungarian-born physicist Leo Szilard drafted a letter to President Franklin D. Roosevelt for Albert Einstein's signature. After war broke out in Europe, this letter and supporting documentation, delivered in person to President Roosevelt by the economist Alexander Sachs, spurred the President to demand action on the uranium question. Shortly thereafter Roosevelt appointed an Advisory Committee on Uranium¹ directly responsible to the President and chaired by Dr. Lyman J. Briggs, the director of the Government's physics laboratory, the National Bureau of Standards, to investigate the matter. In June 1940 the President made this Uranium Committee a subcommittee of the just-formed National Defense Research Committee (NDRC) headed by Dr. Vannevar Bush, president of the Carnegie Institution of Washington, D.C. Briggs was to report directly to Bush, who in turn was accountable to the President.

The Council of National Defense, a World War I holdover agency, issued the order establishing the NDRC. The NDRC's mission was to enlist the aid of civilian scientists in war-related research efforts. As such it was not equipped to perform development functions. Moreover, it ranked no higher than the military laboratories and the National Advisory Committee for Aeronautics (of which Bush was the former head). Thus, there was no effective means of coordinating military, aviation, and civilian war-related research. Nor was there any agency responsible for coordinating research in military medicine. Bush's solution to these administrative problems was to persuade President Roosevelt, during the first year of NDRC's operation, to establish the Office of Scientific Research and Development (OSRD). This was accomplished by Executive Order 8807 on June 28, 1941.

The OSRD was located in the Office of Emergency Management of the Executive Office of the President, with its director immediately answerable to the President. Responsible for mobilizing scientific resources of the nation and applying research results to national defense needs, the NDRC was to continue within the OSRD and make recommendations for R & D projects. When the Executive order went into effect, Bush became director of the OSRD and James B. Conant, president of Harvard and a member of the NDRC, replaced Bush as chairman of NDRC.

At the request of Bush and Briggs, a committee of physicists at the National Academy of Sciences (NAS), was appointed by NAS president Frank B. Jewett to study the uranium question. On May 17, 1941, the committee issued a report recommending "a strongly intensified effort" on uranium research.

Meanwhile, the British Committee for Scientific Survey of Air Warfare had established a subcommittee

¹ Names of the committees directly involved in the atomic bomb project are underlined when they first appear so that readers can refer back to the initial description of their roles and functions.

(code named MAUD) to handle atomic energy research. In July news reached Bush that MAUD was recommending a uranium 235 bomb project. As a result of these pressures and a second report issued on July 11 by NAS, on which engineers as well as scientists collaborated, the Uranium Committee was enlarged during the summer of 1941 and redesignated the S-1 Section of NDRC. Briggs was retained as chairman and Dean George B. Pegram of Columbia University was made vice chairman.

On October 9, 1941, in a meeting with President Roosevelt and Vice President Henry Wallace, Bush received permission to expedite scientific research and engineering planning on the uranium project, stopping short of the development phase. Armed with a third report (November 6, 1941) to the NAS president which concluded that a bomb could indeed be made from U235, Bush once again set out to reorganize the uranium program.

The reorganization, which was accomplished in December 1941, put the S-1 Section under the direct control of OSRD, with Irvin Stewart, as executive secretary of OSRD, coordinating both research and engineering and approving all contracts. A Planning Board, composed of eminent chemical engineers and chaired by E.V. Murphree, vice president of the Standard Oil Development Company, was given responsibility for the engineering aspects of the project. The board's plans were to be available for the production phase, which Bush felt should be in the hands of the army once full-scale plants for producing fissionable materials were under construction. Three program chiefs were appointed to direct physical and chemical research. Columbia University's Harold C. Urey was put in charge of U235 separation by the diffusion and centrifuge methods and the production of plutonium using heavy water as a pile moderator. Ernest O. Lawrence of the University of California at Berkeley was responsible for U235 electromagnetic separation methods, small sample preparation, and cyclotron experimentation involving plutonium. Arthur H. Compton of the University of Chicago was placed in charge of the atomic physics of weapon theory and the chain reaction for producing plutonium, utilizing the graphite pile as a moderator. Contract recommendations for the diffusion and centrifuge projects were given to Bush by the Planning Board. All other contracts would be recommended to Bush by Conant, Briggs, and a program chief. A Top Policy Group, composed of the President, the Vice President, Secretary of War Henry L. Stimson, Army Chief of Staff George C. Marshall, Bush, and Conant would handle all policy matters, including interchange with the British.

On May 23, 1942, at a meeting chaired by Conant and attended by Briggs, Murphree, and the three program chiefs, the results of the program to that time were analyzed and found to be inconclusive. However, the decision was made to build pilot plants for all five processes of producing nuclear fission. At the same time, design and construction would begin on full-scale production plants. The best methods for producing the bomb were to be selected at a later date. Time, rather than money and resources, was deemed to be of the utmost importance because of the lack of reliable intelligence information on German research.

Brig. Gen. Wilhelm D. Styer, chief of staff for the army's newly created Services of Supply and General Marshall's appointed liaison with S-1, approved the plans, which were forwarded to the Top Policy Group and approved by the President on June 17, 1942. General Styer gave Col. James C. Marshall of the Syracuse Engineer District the assignment of organizing a new engineer district for the uranium project. Bush dissolved the old S-1 Section, creating a more streamlined S-1 Executive Committee chaired by Conant and including Briggs, Compton, Lawrence, Murphree, and Urey. The program now entered a new phase of joint OSRD-Army operation, which lasted until May 1, 1943.

Colonel Marshall initially called his new command the "DSM Project" (Development of Substitute

Materials Project). On August 13, 1942, General Order 33 of the War Department, Office of the Chief of Staff, officially designated it the Manhattan Engineer District (MED), with temporary headquarters in New York City. In September Col. Leslie R. Groves of the Corps of Engineers was given command and promoted to brigadier general. On September 23 the Top Policy Group appointed a Military Policy Committee to "consider and plan military policy relating to the project, such planning to cover production, strategic and tactical problems and research and development relating thereto." The committee consisted of Bush as chairman, Conant as alternate, Adm. W. R. E. Purnell and General Styer. General Groves, as executive officer, was to sit with the committee and carry out its recommendations. Periodic progress reports were to be submitted to the Top Policy Group.

In August and September 1942 interchange with Great Britain and Canada was also formalized. Roosevelt and Winston S. Churchill agreed that the United States would concentrate on production because Britain's scientific and engineering manpower was already overextended. A Combined Policy Committee was established on August 23. The U.S. members consisted of Stimson, with General Styer as his deputy, Bush, and Conant.

As the army took over the development phase of the atomic bomb project OSRD's role became increasingly subordinate. During the summer of 1942 the procurement and engineering functions of the Planning Board were taken over by the Manhattan Engineer District and the Planning Board was subsequently terminated. When the army formally assumed control of OSRD's R & D contracts in May 1943, OSRD's S-1 Executive Committee became inactive, although it was never formally dissolved. Bush and Conant continued their active involvement in the control of the project through their membership in the Military Policy Committee. General Groves, as commanding general of the Manhattan Engineer District, reported to the Secretary of War, the Chief of Staff, and the Military Policy Committee headed by Bush and Conant. Groves also formally asked Conant and Richard C. Tolman (vice chairman of NDRC) to be his scientific advisors in July 1943, thus confirming existing arrangements.

Among the numerous laboratories and facilities administered by the Manhattan Engineer District were the Clinton Engineer Works at Oak Ridge, TN, which separated the uranium isotopes; the Hanford Engineer Works at Richland, WA, which produced plutonium; and the laboratory at Los Alamos, NM, which processed the finished materials and assembled the bombs. The Trinity Test of the first atomic bomb took place at a remote Army air base at Alamogordo, NM, on July 16, 1945. The atomic bombs dropped on Hiroshima and Nagasaki, Japan, on August 6 and August 9, 1945, brought about the unconditional surrender of Japan on August 14, which ended World War II. The final cost of the uranium project was nearly \$2 billion.

The subject of postwar control of atomic energy and plans for a "commission on atomic energy," were addressed by Bush, Conant, and Irvin Stewart (executive secretary of OSRD) during the summer and fall of 1944. Over the next several months Bush and Conant urged government policy makers to establish such a commission. On May 4, 1945, Secretary Stimson appointed an Interim Committee whose task was to "survey and make recommendations on postwar research, development and controls, as well as legislation necessary to effectuate them." Although Bush and Conant's initial hopes for international control of atomic energy did not materialize, legislation for the Atomic Energy Commission grew out of the work of this committee. It was chaired by Stimson (with George L. Harrison, his special assistant, as alternate) and included the Secretary and Assistant Secretary of State, the Under-secretary of the Navy, Karl T. Compton (President of M.I.T.), Bush, and Conant.

The Atomic Energy Act (PL 585, 79th Cong., 60 Stat. 755) was passed on August 1, 1946. On January 1, 1947, all phases of atomic energy research and production came under the control of the Atomic Energy Commission (AEC). The Manhattan Engineer District continued another six months for the administrative purpose of closing out the project and transferring records and personnel to the AEC. The S-1 records initially were shipped to Oak Ridge, TN, where they became part of the Atomic Energy Commission's files in January 1947. They subsequently were shipped to the AEC headquarters in Washington, DC, to new headquarters in Germantown, MD, and finally, in 1973, to the National Archives.

The records constituting this microfilm publication were withheld by Bush and Conant as a personal file (see exhibit 1) in 1946 when the OSRD S-1 Section files were transferred to Oak Ridge. The Bush-Conant File was then transferred to the AEC in a locked safe when the OSRD was disbanded in 1947 (see exhibit 2). When the AEC moved to Germantown this safe disappeared, only to be rediscovered several years later under a stairwell in one of the AEC buildings. At the time this mysterious locked safe was discovered by an AEC records officer, the origin and contents were unknown. Dr. Richard Hewlett, the AEC historian, was invited to witness its opening by a locksmith hired for the purpose. According to Hewlett, the first item he pulled from the file was a letter signed by Franklin D. Roosevelt. The discovery of these documents, according to James P. Baxter, III, then Historical Advisory Committee Chairman for the AEC, "made possible for the first time a satisfactory account of the intricate wartime negotiations with Great Britain and Canada on atomic energy."²

The Bush-Conant File was transferred to the National Archives in 1973, along with other S-1 files of the OSRD containing correspondence and technical reports on the development of the atomic bomb (1939-45).

Records Description

Arrangement

The Bush-Conant File contains over 240 folders arranged in 2 sections. Section I, "Subject Files," consists of folders 1-22, which are arranged under four broad topics (an arrangement imposed in preparation for this microfilm publication). The topics are: Historical Overview of S-1 Program, 1939-45 (folders 1-7); U.S.-British Relations on Nuclear Energy, 1942-45 (folders 8-12); OSRD S-1 Program Administration, 1941-45 (folders 13-21); and Material Relating to a National Research Foundation, 1945 (folder 22). Section II, "DSM [Development of Substitute Materials] Alphabetical Subject Files," contains, as the title states, subject files arranged alphabetically.

Internal file evidence suggests that Section I consists of files made by Conant for his own personal use and that the Section II files were maintained in Conant's OSRD office by his secretary, Ruth Jenkins. The files in Section I, in their present arrangement, should give a good historical overview of the development of the atomic bomb project. Folders 1 and 2 contain a two-part manuscript history of the S-1 Project, written by Conant and covering the period from May 17, 1941 through June 19, 1942. Also included in these two folders are the documents cited in his notes. Folder 3 contains documents originally intended to

² Richard G. Hewlett and Oscar E. Anderson, The New World 1939/1946, Vol. I of A History of the United States Atomic Energy Commission (University Park, PA: Pennsylvania State University Press, 1962), foreword.

carry the history down to a later date, a project that Conant never completed. (See exhibit 3.)

Finding Aids

Finding aids consist of an Annotated Folder Title List (Appendix A), an index (Appendix B), and a Folder Contents List. The Annotated Folder Title List and the index were prepared in the National Archives in conjunction with this microfilm publication. The Folder Contents List was prepared by the Historian's Office of the Atomic Energy Commission when the records were shipped to the National Archives. It designates memorandums and letters by sender, recipient, and date, rather than by subject matter. It has been included on roll 1 of this microfilm publication following the introduction and Appendixes A and B.

Several of the items in the Bush-Conant File (and a lesser number among the S-1 Files) are stamped and numbered with AEC historical document numbers. Two listings of these numbered documents are available: one is a chronological list by document date and the other is a list by document number.

Security Classification

Most of the items in the Bush-Conant File originally bore the security classification "Secret." There were also a few "Top Secret" items (most having to do with proposed atomic energy legislation), some "Confidential" items, and a few items bearing the British security classification "Most Secret." The Bush-Conant File was reviewed by the AEC classification staff. Eligible documents were declassified before the records were transferred to the National Archives. Classified documents containing "Secret Restricted Data" were forwarded to the National Archives at a later date. In 1980-81 the National Archives Records Declassification Division reviewed the documents and cancelled many former classification markings. At present approximately 80 items remain classified for security restricted data and are maintained separately from the declassified files. General Services Administration (GSA) withdrawal forms have been inserted into the files where these documents have been withdrawn by the National Archives. Sanitized copies of documents requested by researchers in Freedom of Information Act requests have been inserted into their original file locations. Current declassification authority for all "Restricted Data" documents rests with the Department of Energy.

In addition to the GSA withdrawal forms mentioned above, there are, scattered throughout the records, sheets of paper indicating that an item has been withdrawn but giving no other information, such as date of withdrawal or by whom or for what reason the item was removed. These sheets were probably inserted by members of the AEC historian's office during the late 1950s when research was being conducted for volume I of the AEC history. They represent items that were not refiled while the documents were in the custody of the AEC. The documents are presumed to be lost. The Folder Contents List prepared by the AEC indicates that those items are "not in file."

Related Records

Other S-1 files in Record Group 227, Records of the OSRD, contain materials accumulated by other individuals associated with the Uranium Committee or the S-1 Section (approximately 29 linear feet for 1939-47). Among the records are the files Briggs maintained as chairman of the original Uranium Advisory Committee; the National Defense Research Committee correspondence file maintained by Richard C. Tolman, Vice Chairman of NDRC; files for scientific R & D personnel connected with the project; project reports from the various Manhattan Engineering District sites; materials relating to the

Naval Research Laboratory's (NRL) research on thermal diffusion and NRL correspondence on the separation of uranium isotopes; photographs and plans for the Los Alamos, Clinton, and Hanford sites, before and during construction; correspondence of the National Academy of Sciences relating to recruitment of scientific personnel for the project and other personnel files pertaining to the project; eyewitness accounts of the Trinity Test of the atomic bomb at Alamogordo, NM, on July 16, 1945; minutes of the S-1 Executive Committee; and a historical summary of the Manhattan Project Liaison Office for the Canadian Heavy Water Pilot Project (code named "Evergreen Area").

The series, General Records of the OSRD, 1940-47, includes four folders that provide information on the transfer of records relating to the S-1 Section of the Manhattan Project. These folders are filed under the headings "Records: S-1 Files," "Records: S-1 Files, Appointees A-Z," and "Records: S-1 Files, Contractors A-Z." Among the documents in these folders is a memorandum expressing the intention of Bush and Conant to withhold some of their S-1 records as a "personal file." This personal file, which was transferred to the AEC on April 4, 1947 (see exhibit 2 above), is the Bush-Conant File reproduced as this microfilm publication. Three other files from the general records series of the OSRD pertain to "Security: S-1 . . .," and another file pertains to "Organization--S-1." That series also contains a heading, "Atomic Energy," which includes several topics pertaining to atomic energy-related issues resulting from the S-1/Manhattan Project, and a heading, "Atomic Energy Commission," which contains correspondence and minutes of the meetings of the Atomic Energy Commission and its committees.

In the spring of 1958, Vannevar Bush forwarded to Wayne C. Grover, the Archivist of the United States, some OSRD records that he and Conant had retained in a safe at MIT. Included among those records (now in RG 227) were 13 documents (7 of which remain security classified) that correspond to records in the Bush-Conant File. These documents and withdrawal sheets are not included in this microfilm publication. However, the declassified documents and the withdrawal sheets may be examined upon request at the National Archives or researchers may purchase copies of these items.

Among other closely related records in the custody of the National Archives are records of the Manhattan Engineer District in Records of the Office of the Chief of Engineers, RG 77. Two relevant records series have been reproduced as National Archives microfilm publications. *Correspondence ("Top Secret") of the Manhattan Engineer District, 1942-1946*, (M1109) 5 rolls, consists of correspondence maintained by Maj. Gen. Leslie R. Groves as commanding general of the Manhattan Engineer District from September 1942 to December 1946. This correspondence, much of which is with important government or military officials, documents the army's role in the development, production, and deployment of atomic weapons from 1942 to 1946, with occasional items as late as 1950. *The Harrison-Bundy Files Relating to the Development of the Atomic Bomb, 1942-1946*, (M1108) 9 rolls, reproduces records that document the army's role in the development and production of nuclear weapons and were originally created and maintained in the Office of the Secretary of War. George L. Harrison and Harvey H. Bundy, two special assistants to Secretary of War Henry L. Stimson, served as liaisons between Stimson and Groves and other officials participating in the Manhattan Engineer District Project. In addition, the Manhattan Engineer District Records in RG 77 include general correspondence arranged by the War Department decimal classification scheme; directives; investigatory, fiscal, and intelligence files; and reports relating to bomb tests.

The Manhattan Engineer District History, available on microfilm no. A1218 (14 rolls), was compiled by Gavin Hadden under Groves' direction. It is among the records of the Armed Forces Special Weapons Project, of which Groves was chief, in Records of the Defense Nuclear Agency, RG 374.

A portion of Groves' personal papers, 1943-70, is in the National Archives Gift Collection. Some of the correspondence, speeches, publications, newspaper clippings, diaries, and photographs included therein relate to the Manhattan Project and the postwar development of nuclear energy.

Related collections outside the National Archives include the Vannevar Bush Papers in the Library of Congress Manuscript Division, the James B. Conant Papers at the Harvard University Archives, and the records of the National Academy of Sciences Committee on Atomic Fission, 1941-1942, (2 inches) in the Central Files at the National Academy of Sciences Archives in Washington, DC.

APPENDIX A

Annotated Folder Title List

I. JAMES B. CONANT'S PERSONAL FILES, ARRANGED BY SUBJECT

A. Historical Overview of S-1 Program, 1940-45

1. S-1 Historical File, Section A [1941]
Documents gathered to substantiate Conant's informal history of the S-1 (A-bomb) project, covering the period from May 17, 1941, to June 19, 1942. The documents include typewritten and handwritten copies of Conant's informal history and Conant's handwritten lists of important documents. (See also folders 2 and 86.) Also included are copies of the three 1941 National Academy of Sciences reports on the feasibility of producing an atomic bomb.
2. S-1 Historical File, Section B [1941-42]
See folder 1.
3. S-1 Historical Material [1943-44]
Correspondence on technological progress in the development of the A-bomb during 1944 and materials saved by Conant for an uncompleted extension of his history of S-1. (See folders 1 and 2.)
4. S-1 Reports to and Conferences with the President [1942-44]
Memorandums and letters between Vannevar Bush and Franklin D. Roosevelt; materials addressed to Bush or Arthur H. Compton describing the dissatisfaction with the S-1 project felt by some of the scientists associated with it; letters from Leo Szilard expressing his concern with the policy of compartmentalization adopted by the managers of the S-1 project and his possible patent rights.
5. S-1 Intelligence [1943-45]
Reports summarizing information intercepted by intelligence sources on Germany's efforts toward manufacturing an atom bomb (see folders 7, 75, and 230) and a Sept. 25, 1945, memorandum discussing Bush's postwar thoughts on sharing basic scientific knowledge of atomic energy with the Russians.
6. Patent Matters [1941-45]

Letters and memorandums related to the withholding of patents and security classification for patent applications relating to atomic energy matters. Particularly documented are Dr. William A. Shurcliff's duties as advisor to Capt. Robert A. Lavender, S-1 patent liaison. Captain Lavender prepared patent applications for all OSRD and War Department inventions in the field of atomic energy. (See also folders 13, 14, and 147.)

7. Miscellaneous S-1 JBC [James B. Conant] Material [Apr. 1941-Jan. 1945]

Various documents, including correspondence between Bush and Frank B. Jewett, President of the National Academy of Sciences (NAS) in April 1941, before the establishment of the academy's committee to review and report on the uranium problem; Dr. S.K. Allison's May 1942 opinion that the objective (of producing an atomic bomb) could be reached; copies of letters of appointment to the S-1 Executive

Committee and plans to inform the British of the new American organizational arrangement; records of discussions about obtaining information on the status of Germany's nuclear weapons program; reports on the progress of electromagnetic separation of uranium isotopes at Oak Ridge, TN; Conant's handwritten notes on the status of plutonium and uranium 235 production as of December 1945 and January 1946; and a Jan. 30, 1945, letter from Bush to Harvey H. Bundy discussing the urgent necessity of planning the dissemination of information within the U.S. on the atomic bomb, handling foreign relations, and providing guidance to the War Department on the issue of postwar atomic energy research.

B. U.S.-British Relations on Nuclear Energy, 1942-45

8. British Relations in 1942

Correspondence notifying the British of the reorganization of the U.S. uranium program in December 1941 and British correspondence outlining the organization of their "Tube Alloys" program. (See also folder 7.)

9. S-1 British Relations Prior to Interim Committee [Fldr.] No.1 [1942]

Letters and memorandums discussing the establishment of an interrelated effort on the part of Britain and the U.S. on atomic weapon development along with appropriate controls.

10. S-1 British Relations Prior to Interim Committee [Fldr.] No. 2 [1943, with some 1944 and 1945 materials]

Correspondence documenting the development of basic policy governing the exchange of information among Great Britain, Canada, and the United States.

11. S-1 Combined Policy Committee [1943-45]

Correspondence pertaining to the committee concerned with wartime cooperation and interchange between the Americans and the British concerning atomic energy matters, raw materials acquisition, and patent issues.

12. Atomic Energy Discussions--November 1945 [through] Atlee-Truman Conference

Bush's correspondence with key government officials and "memos to file" concerning his behind-the-scenes roles in the conference and a document entitled "Program of

Discussions on Atomic Energy with the British and Canadians."

C. OSRD S-1 Program Administration, 1941-45

13. Material from Liaison Office Files--Primarily Shurcliff's Relationships to S-1 Activities, Folder No. 1 [1942-44]
Files of William A. Shurcliff, including an Oct. 31, 1944, memo to his successor concerning contents and organization of this file. (See also folders 6, 14, and 147.)
14. Material from Liaison Office Files--Primarily Shurcliff's Relationships to S-1 Activities, Folder No. 2 [1942]
Records documenting Shurcliff's duties of designating which nuclear-energy-related patent applications should be made secret under the provisions of Public Law 700. (See also folders 6, 13, and 147.)
15. S-1 OSRD Research Program, Executive Planning Committee [Fldr.] No. 1 [1941-42]
Memorandums and letters detailing the composition and purpose of the committee, also known as the Planning Board (the board that advised on the engineering aspects of the A-bomb project); and a handwritten note from A. H. Compton to Bush regarding the reorganization of S-1 in December 1941.
16. S-1 OSRD Research Program Executive Planning Committee, [Fldr.] No. 2 [1942-43]
Contents similar to folder 15.
17. S-1 Technical Reports [1942-44]
Memorandums and letters on the status of the S-1 project and certain technical matters pertaining thereto, reports on the A-bomb project, and a "Prospectus on Nucleonics" prepared by scientists in the Chicago Metallurgical Laboratory in 1944, which acquainted policy makers with the approaching impact of atomic energy developments on international relations.
- 17A. S-1 Super Bomb [1942 and 1944]
Sanitized Oct. 20, 1944, memorandum from Conant to Bush concerning the "possibilities of a Super Bomb [i.e., hydrogen bomb]" and a Dec. 15, 1942, memorandum from Conant to Bush on the possibility that plutonium might prove to be a "super-explosive."
18. S-1 Military Policy Committee [1942-45]
Memorandums and correspondence pertaining to the committee overseeing the research and production of the A-bomb for military use. Also included is information on the composition of that committee and its dissolution after the accomplishment of its wartime mission.
19. S-1 Interim Committee--Post War [sic] [1944-45]
Documents relating to the need for postwar planning in regard to atomic energy matters; various drafts of the Atomic Energy Act of 1945; and correspondence relating to the composition and purpose of the postwar "Interim Committee" on atomic energy and matters with which it would have to deal. There are several

exchanges between both Bush and Conant and the Secretary of War. (See also folder 97.)

20. J.B. Conant - Personal NDRC [1941-45]

A report by Conant on "The Organization of Research Instrumentalities of War in Great Britain in 1941"; a July 14, 1944, memorandum from Conant to Jewett proposing a joint Army-Navy Technical College for training in postwar weapons matters; a draft statement of publications policy by a member of the Carnegie Institution; a table of contents for a handbook (CL-697) on nuclear weapons science and technology; and other documents.

21. Miscellaneous Bush-Conant Material, May 1941-October 1944

A list of reports being returned by the NDRC War Department liaison officer; Conant's handwritten prognostications on various processes for producing fissionable materials; new assignments for R. J. Woodrow of the OSRD Transition Office; a discussion of an action plan concerning censorship of articles on atomic energy as the end of the war approached; and other documents.

D. Material Relating to a National Research Foundation, 1945 (Precursor of National Science Foundation legislation)

22. Postwar Relation of Federal Government to Science [1945]

Testimony and other commentary on legislation for the creation of a National Research Foundation which ultimately became the National Science Foundation.

II. DSM ALPHABETICAL SUBJECT FILES

Official alphabetical correspondence files kept by Conant's secretary, Ruth E. Jenkins. For each letter of the alphabet there is a "general" file and several subject files, the majority of which are the names of persons associated with the A-bomb project. File folders in this segment of the Bush-Conant File are marked with the acronym DSM, which stands for the project's original code name ("Development of Substitute Materials") under the Army Corps of Engineers. Each document is annotated in the upper right corner with the file designation. Folder titles are rendered verbatim in this list with the addition in brackets of dates and clarifying terms.

23. A [1940-44]

Correspondence concerning Samuel K. Allison, Henry Arnold, Luis Alvarez, W. A. Akers, Edoardo Amaldi, Congressman J. Z. Anderson, and others.

24. Academy Committee [1941]

Four letters written by Jewett to Bush and A. H. Compton pertaining to the NAS Committee on Atomic Fission. (See file number 238 for reports of this committee.)

25. Air Priority [Aug.-Sept. 1943]

Requests for air priority for three individuals traveling on S-1 business.

26. Aliens [1942]

Correspondence pertaining to employment of aliens on OSRD's S-1 project and to travel

restrictions placed upon Dr. Enrico Fermi as a registered alien. Also included is a copy of specifications for the 1940 U.S. patent on a "Process for the Production of Radioactive Substances" developed by Fermi and others.

27. Appointments [December 1941-August 1945]
Primarily memorandums and letters concerning special NDRC appointments.
28. B [1942-44]
Correspondence concerning people associated with the project (whose surnames begin with B), Belgian ore, and beryllium.
29. Beams, Dr. J. W. [1942-March 1944]
Correspondence with or about Dr. J. W. Beams (Rouss Physical Laboratory, University of Virginia) concerning that institution's research contract for the separation of uranium 235 using the centrifuge process.
30. Breit, Gregory [1940-44]
Correspondence with or about Breit, Consultant to the S-1 Executive Committee and at one time a member of the Uranium Committee.
31. Briggs, L. J. [1940-44]
Correspondence with or about Lyman J. Briggs, the first head of the Advisory Committee on Uranium, and the Uranium and S-1 Sections of NDRC and OSRD, respectively. (See also folder 129.)
32. British [Fldr.] 1, 1942
Correspondence with various members of the British Central Scientific Office of the British Supply Council in North America and others working on the British atomic bomb program. Also included is correspondence about the British and their program. Code word "Tubealloy" is used.
33. British [Fldr.] 2, 1943
Materials dealing with the exchange of information between British and American scientists, American patent applications (1 document), and U.S. visits of various people involved in the British project.
- 33A. British Liaison--Special [November 1942 through September 1943]
Documents describing the terms of liaison between the United States, Great Britain, and Canada on the development of the A-bomb.
34. Budget [Fldr.] 1 [1942]
Documents describing S-1 project budget matters for 1942, including amounts allotted to S-1 by the army and amounts needed by various government and university laboratories.
35. Bush, Dr. V. [Fldr.] 1 [1942-43]
Letters and memorandums of Briggs, Conant, Gen. Leslie R. Groves, E.V. Murphree, and Irvin Stewart concerning the S-1 project and its relationship to the army engineering program.

36. Bush, Dr. V. [Fldr.] 2 [1944]
A few miscellaneous carbons of Bush correspondence.
37. Bush, Dr. V. [Fldr.] 3 [1945]
Correspondence (primarily memorandums to Conant) concerning the 1946 fiscal year budget and the necessity for a U.N. international scientific section.
38. Bush, V. [1943-45]
Formerly Top Secret file of Bush-related materials, consisting primarily of memorandums from Bush to Conant on the international implications of the A-Bomb, biological warfare (1 document), Conant's eyewitness account of the Trinity Test, and June 1943 draft letters (to serve as morale boosters for project scientists) to Groves and Oppenheimer from the President.
39. C [1942-45]
Correspondence pertaining to the Universities of Chicago, California, and Cornell; J. R. Coe; K. T. Compton; the Consolidated Mining Corp. of Canada; D. Cooksey; J. M. Carter; and the Canadian Radium and Uranium Corporation.
40. Cables [1943]
Slim file consisting of a few miscellaneous cables and a document outlining procedures for sending cables to England.
41. California Institute of Technology [Dec. 1944-45]
Correspondence concerning contract OEMsr-418.
42. Canada [Aug. 1942-Aug. 1943]
Correspondence primarily concerning Dean C. J. Mackenzie (acting president of the National Research Council of Canada) and the Canadian part of the A-bomb project.
43. Centrifuge Project [Dec. 1943-Feb. 1944]
Correspondence relating to the closeout of the centrifuge project.
44. Classified Material, Handling of [1942]
Correspondence on classification policies (particularly concerning personnel matters, travel arrangements, and contractors' correspondence) and a discussion of the postwar handling of classified information in the custody of contractors.
45. Clearances [Fldr.] 1 [1942]
Routine correspondence on clearances for various project people.
46. Clearance Notices, January 1 [through March 27], 1943
Routine notification of clearances of project people in various capacities. (File considered not worth filming, but may be examined at the National Archives.)
47. Clearance Procedure [1942]

48. Clearances (Refused) [1941-43]
Folder withdrawn because disclosure of information in these records would constitute a clearly unwarranted invasion of personal privacy. (5 U.S.C. 552, b6).
49. Columbia University [1943]
Materials pertaining to inadequate laboratory conditions at Columbia University (in terms of space and security), plans and estimated costs of remodeling, and blueprints of laboratory layout and project personnel locations.
50. Combined Policy Committee [1944]
Notices of Combined Policy Committee (United States, Great Britain, Canada) meetings and Conant's memo questioning the advisability of a Canadian heavy water pile project.
51. Compton, A. H., 1945
Compton's views on maintaining scientific manpower for the war effort (and Conant's reactions to them) and arrangements for a Chicago meeting between the two.
52. Compton, Dr. A. H. [Fldr.] No. 2, 1944
Correspondence with Compton concerning the leakage of Metallurgical Laboratory project information to a member of another OSRD project, the acquisition of needed personnel from other institutions, and other similar matters.
53. Compton, A. H., 1943
Various documents, including personnel requests (particularly for individual chemists from other OSRD projects); plans for dismantling the West Stadium pile at the University of Chicago and alternatives for its relocation, including information on possible piles to be erected at Argonne Forest or Site X; and information on the production of element 49.
54. Compton, A. H. 1941-42
Correspondence discussing shifting various personnel from other OSRD projects, the employment of "near aliens," Compton's clearance, the possibility of surveillance of some project scientists because of their backgrounds, enlarging the physics aspect of the program (making E. O. Lawrence responsible for one part), and other topics relating to the early phase of the project.
55. Conant, James B. [1941-43]
Miscellaneous correspondence concerning Bush's initial plans to gear up the program in November 1941, contracts, and Bush's memo to Conant about dissolution of the S-1 section.
56. Contracts Conformed [1943]
Contract agreements for Columbia University and the National Academy of Sciences.
57. Contracts--Final Reports, 1942-43
Correspondence concerning final reports on work done under contract for the A-Bomb project.
58. Contacts, Final Reports--Miscellaneous [Fldr.] No. 2, 1944

Contents similar to folder 57.

59. Contracts (Letters) [Fldr.] 1 [1942]
Correspondence concerning contracts. Also included is a copy of the original 1940 contract with Columbia University.
60. Contracts (Letters) [Fldr.] 2, 1943
Contents similar to folder 59.
61. Contracts (Letters) [Fldr.] 3, 1944
Contents similar to folder 59.
62. Contracts--Letters of Intention [1942-43]
Letters of intention, as indicated in folder title.
63. Contracts (List[s]) [1943]
Correspondence with university and industry contractors requesting project statements for contracts for which they were responsible. Also included are lists of projects containing contract numbers, names of institutional contractors, project descriptions, funding, and project expiration dates.
64. D [1943-44]
Miscellaneous correspondence for subjects beginning with the letter "D."
65. Deferments, General, A to G [1942]
General information on how and under what circumstances draft deferment requests should be made for men working on the S-1 project, followed by draft deferment requests for men whose surnames began with letters "A" through "G."
66. Deferments, H to N [1942]
Draft deferment requests for men working on the S-1 project whose surnames began with the letters "H" through "N."
67. Deferments, O to Z [1942]
Draft deferment requests for men working on the S-1 project whose surnames began with the letters "O" through "Z."
68. Directives [1943]
Two cross reference sheets to other files.
69. Doan, R. L. [1942-43]
Correspondence with Dr. Richard L. Doan, administrative officer of the University of Chicago Metallurgical Laboratory, about distilled calcium.
70. DuPont Company [1942]
Correspondence relating to the DuPont Company contract for the production of fluorinated hydrocarbons.

71. E [1944-45]
Correspondence relating to Carl Eckart and Paul H. Emmett.
72. Einstein, Albert [1941]
Correspondence concerning Albert Einstein and why he was not being included in the S-1 project, as well as two attempts to obtain certain theoretical data from Einstein without revealing its intended use.
73. Eldorado, C. R. and U. Co[rp]. [1942]
Correspondence regarding a contract for 60 tons of uranium oxide from the Eldorado Gold Mines placed through their U.S. sales representative, the Canadian Radium and Uranium Corporation.
74. Executive Committee Directive
Empty folder.
75. Espionage [1942-43]
Correspondence relating to OSRD's efforts to obtain information on German atomic energy developments and speculation as to how far their knowledge and/or program had progressed.
76. F [1942-45]
Correspondence on a variety of subjects with persons whose surnames begin with "F."
Included is correspondence with Lt. W. A. Fogg of the Manhattan Engineer District concerning security matters.
77. G [1941-44]
Correspondence pertaining to various persons whose surnames begin with "G," to such subjects as German scientists and German publications, and to such companies as the General Aniline Works and the B. F. Goodrich Co.
78. Grosse, Dr. [Aristid V., 1942-43]
Correspondence concerning the trip of Aristid V. Grosse to Russia on a War Production Board visit for the Rubber Administrator's office expressing concern about his loyalty to the U.S.
79. Groves, Gen. L. R., 1942-43
Correspondence on matters involving Groves, including that of obtaining engineering personnel for the Manhattan Project.
80. Groves, General L. R. [Fldr.] No. 2, 1944
Similar to folder 79 with the inclusion of correspondence pertaining to the feasibility of the centrifuge project.
81. Groves, Gen. L. R., 1945
Four documents, including a request for the original copy of a report dated June 13, 1942, which was sent to the President, and correspondence about a contract extension for the Standard Oil Development Company.

82. Ha-Hn [1943-44]
Correspondence with and about various persons and chemical companies.
83. Ho-Hz [1943-44]
Correspondence concerning F. T. Hobbs, T. R. Hogness, and Hughes.
83. A. Halban, Hans [1942-43]
Correspondence pertaining to Hans von Halban, a member of the Canadian Project, including a list of titles and authors of American reports for reports A-276 through A-402.
84. Health Hazards [1942]
Letter from A. H. Compton to J. B. Conant about the Chicago Radiation Laboratory's plans for protecting the health of its personnel and about conducting further research on radiation hazards. (See also folders 218 and 235.)
85. Hilberry, Dr. Norman [1943-44]
Correspondence pertaining to concerns of Hilberry, associate project director of the University of Chicago Metallurgical Laboratory.
86. Historical File--Special [1942-45]
Key documents on various issues, including several accounts of the discovery and early study of element 94, the Chicago Metallurgical Laboratory-DuPont Controversy, the Irving S. Lowen complaint to the President, and the June 19, 1942, memo from Bush to Conant on the transfer of the engineering aspects of the Tube Alloys program to the army. (See also folders 1-3.)
87. I [1942-43]
A few items pertaining to the University of Illinois and a cross reference to "ingot."
88. Insurance [Feb. 1922-Feb. 1943]
Correspondence concerning insurance on hazardous activities for employees of contractors of OSRD who were subject to radiation risks.
89. Iskraut, Richard [1942]
Correspondence concerning a man considered to have a suspicious background and thought to be a source of information about scientific developments in Germany.
90. International Situation [1942-Jan. 1943]
Documents dealing with the exchange of information with British and Canadians, including W. A. Akers' letter to Conant of December 15, 1942, outlining the British position, and original handwritten draft and copy of Conant's January 7, 1943, Memorandum on Interchange with the British and Canadians on S-1.
91. J [1941-44]
Correspondence involving Jewett and others on the subject of atomic fission, including Zay Jeffries of General Electric on postwar management of the atomic energy field (one of several copies of his July 14, 1944, letter to A. H. Compton).

92. K [1941-44]
Correspondence about University of Illinois Professor Donald B. Kerst's release to work on the Manhattan Project, Kerst's inquiry concerning planned development of large betatrons at other institutions, and correspondence concerning other persons whose names begin with the letter "K."
93. Kellogg Company, [1942]
Correspondence pertaining to E. E. Minett, to be employed by the M. W. Kellogg Company, and others with various relationships to that company, as well as correspondence relating to the Kellogg Company's diffusion project.
94. Kistiakowsky, George, 1940-45
Correspondence relating to Kistiakowsky's pleas for more trained (and experienced) young physics Ph.D.'s for Los Alamos research and development work, and to Kistiakowsky's own acceptance of a position at Los Alamos.
95. L [1943-44]
Correspondence on a variety of subjects pertaining to various people whose names begin with the letter "L."
96. Lawrence, E. O., 1941-45
Correspondence, consisting of letters and telegrams pertaining to staffing, travel arrangements, Lawrence's professional opinions on various scientific and technological aspects of the atomic bomb project, and the progress and potential of the various approaches involved.
97. Legislation--S-1 [1944-45]
Formerly a top secret file relating to proposed atomic energy legislation, containing memorandums by Bush and Conant on what should be included in such legislation and questions concerning the constitutionality of government control of atomic energy; a copy of the "final draft" of the bill to establish the Atomic Energy Commission, forwarded to Conant by the alternate chairman of the "Interim Committee," George L. Harrison, special consultant to Secretary of War Henry L. Stimson. (See folder 19.)
98. Lewis Report [1942]
One brief noncommittal reply to an MIT scientist's suggestions and offer to help at the Naval Research Laboratory.
99. Liaison Office [1942]
Letters pertaining to transmittal of S-1 material and requests for material to, and from, London.
100. Los Alamos Visits
Empty folder.
101. Ma-Mn [1943-44]
Requests for reassignment of personnel within the A-bomb project, the release of personnel

from outside for work within the project, and scarce materials for use by the project; a congratulatory letter to Conant from the president of the Canadian National Research Council after the deployment of the two atomic bombs in Japan, and Conant's response (Aug. 1945).

102. Mo-Mz [1943-44]

Correspondence which includes some personnel and other issues but which is largely devoted to the S-1 Committee's consideration of the possibility of using molecular distillation of "tuballoy" [sic] metal as a possibility of separating tuballoy (uranium) isotopes and the committee's rejection of that method (May 1944). (See also folder 32.)

103. Manhattan District (New York) [1943]

Three rosters of military personnel involved in the Manhattan District by geographic location on specific dates in 1943, and correspondence pertaining to the safeguarding of information on the project, including the proper use of security classifications.

104. Manhattan District (Washington) Liaison Office [1942]

Three pieces of correspondence pertaining to office housekeeping matters.

105. Marshall, Col. [1942-43]

Correspondence concerning Col. James C. Marshall, encompassing his tenure as commander of the "DSM Project."

106. Meetings, General [S-1 Executive Committee, Nov. 1941, and 1942]

Brief correspondence pertaining to Section S-1 meetings.

107. Meeting [S-1 Executive Committee], September 10-11, 1943

Correspondence pertaining to travel, stenographic arrangements and agenda for the S-1 Executive Committee meeting at the Oak Ridge, TN, Clinton Engineer Works on September 10 and 11, 1943.

108. Meeting [S-1 Executive Committee], April 29, 1943

Correspondence setting the date of April 29, 1943, for an S-1 Executive Committee meeting.

Folders 109 through 125 pertain to other S-1 Executive Committee meetings and are arranged in reverse chronological order (Sept. 26, 1941, through Mar. 18, 1943). See Contents section.

126. Metal Hydrides, Inc. [1942]

Correspondence pertaining to various problems with Metal Hydrides, Inc., of Beverly, MA, including the furnishing of small quantities of impure uranium to legitimate private concerns.

127. Metallurgy [1943]

Correspondence, largely form letters, concerning clearances relating to the metallurgy aspects of the A-bomb project.

128. Military Policy Committee [1942 and 1945]
Correspondence concerning the Military Policy Committee (including a copy of the initiating memorandum) for 1942, and Bush's 1945 memorandum relating to its dissolution.
129. Miscellaneous [L. J. Briggs' Materials, 1940-42]
Correspondence pertaining primarily to clearances and staff, which appears to have been part of Dr. Briggs' files while he was director of the S-1 Section; an organization chart, and lists of civilian scientific personnel in Division B, ca. 1940. (See also folder 31.)
130. Murphree, E. V. [1942]
Correspondence with Murphree of Standard Oil Development Company, head of the Planning Board and a member of the S-1 Committee, pertaining to scientific and technical matters of the centrifuge and diffusion methods of uranium and plutonium production, including correspondence on non-renewal of the centrifuge contract at the University of Virginia.
131. Murphree, E. V. 1943
Continuation of Conant's correspondence with Murphree concerning discontinuation of the centrifuge process of uranium isotope separation and Murphree's changing views on the subject. (This folder and folder 130 above are among the key files in this collection as is the related folder 238. See also folders 15, 16, 43, 132, and 151.)
132. Murphree, E. V. 1944
Continuation of correspondence related either directly or indirectly to Murphree concerning the centrifuge and diffusion processes and other matters, such as the form of government compensation to the Stuart Oxygen Co.
133. N [1942-45]
Correspondence pertaining to the Nieder Fused Quartz Company, publication of an article by M. A. Northrup, the National Research Council of Canada, the Naval Research Laboratory (NRL), New York University (in relation to S-1 raids on its faculty and renewal of their OSRD subcontract), S. Neddermeyer, H. A. Nelson, and J. Nelson.
134. Newspaper Clippings [1941 and 1943]
135. Nichols, Col. K. D. [1942-45]
Correspondence with or pertaining to Nichols of DSM, Washington, DC, and the Manhattan Engineer District, Oak Ridge, TN.
136. Nier, A. O. C. [1942-43]
Correspondence with Nier, an associate professor of physics at the University of Minnesota, about S-1 administrative and patent matters.
137. Naval Research Laboratory--Special [Diffusion Process, Fldr. No. 1, Jan. 1943]
Correspondence and related reports pertaining primarily to the liquid thermal diffusion process on which NRL was working. (See also folders 138 and 185.)

138. Naval Research Laboratory--Special [Diffusion Process Fldr. No. 2, July-Sept. 1943]
Continuation of folder 137, primarily in regard to a proposed S-1 subcommittee review of the S-1 diffusion project. (See also folder 185.)
139. O [1942-43]
Correspondence pertaining to D. W. Osborne (Ohio State University), W. Overbeck, and a draft organization chart for the initial phase of the A-bomb project.
140. Oppenheimer June 1, 1942-February 1943
Correspondence pertaining to the procurement of scientists desired by J. Robert Oppenheimer for the Los Alamos Project, Bush's request to know exactly who had knowledge of the ultimate purpose of Oppenheimer's assignment, and a copy of the War Department's May 13, 1942, security notice on Oppenheimer (last document in file).
141. Oppenheimer [Fldr.] No. 2, March 1943-December 1943
Correspondence of Oppenheimer and staff with Conant, Conant's staff, various universities, and OSRD projects concerning Los Alamos personnel procurement, materials, production, and procurement schedules for Los Alamos, and appraisals of experimental and research endeavors; a list of Los Alamos personnel transferred from OSRD projects (as of April 1943); and a list of potential questions to be asked of the Manhattan Project by the S-1 Reviewing Committee (Mar. 20, 1943).
142. Oppenheimer [Fldr.] No. 3, January 1944-May 1945
Correspondence pertaining primarily to scientific and technical matters, development and transfer of equipment, a planned trip to Los Alamos by Conant, and British, Canadian, and American interchange.
143. Pa-Pn [Oct. 1943-Apr. 1944]
Miscellaneous correspondence to and from Conant largely concerning people whose names begin with "P," including materials pertaining to T. Parran (Surgeon General), Pegram, Pennsylvania Salt Manufacturing Company, University of Pennsylvania, and Pennybacker of Machlett Laboratories concerning a possible method of isotope separation.
144. Po-Pz [Dec. 1942-Mar. 1943]
Continuation of correspondence filed under letter "P" above, including proposals, publications, the issue of wartime censorship, particularly in relation to articles submitted to the Journal of the American Chemical Society by A. L. Henne (an outsider to the Manhattan Project), and correspondence with Rear Adm. W. R. E. Purnell in relation to lists of scientists in Germany and Sweden working on the S-1 project and their locations.
145. P-9 Committee [Aug. 9, 1943]
Harold C. Urey memorandum (Aug. 9, 1943) to the "P-9 Committee" regarding future developments on the use of heavy water in active piles.
146. Parsons, W. S. [Sept. 1943-July 1944]
Correspondence pertaining to personnel recruitment for Parsons' Los Alamos staff, raids on NDRC personnel, and Conant's increasing conflicts of interest (as head of NDRC) in the personnel assignment process. Also included is considerable correspondence on the

release of Chester Snow by Briggs and Snow's assignment to Parsons.

147. Patents [1942-44]

Memorandums and letters pertaining to the patenting of inventions related to S-1 work (by both outsiders and OSRD contractors), the security classification of patents under PL 700, the appointment and duties of Shurcliff as S-1 liaison with the Patent Office, the U.S. Government's interest in patents obtained by OSRD contractors and subcontractors, Bush's June 19, 1942, memorandum to Conant on "Patent Aspects of S-1," and a discussion of issues concerning specific patents, including one by Szilard. (See also folders 6, 13, and 14.)

148. Personnel [1942]

Letters and memorandums concerning transfers and raids of S-1 personnel, attempts to acquire scientists from private industry, and a suspected enemy alien infiltrator.

149. Personnel Associated with DSM [1942]

Primarily lists of the personnel of various S-1 projects and various contractors showing their relationship to, and knowledge of, the S-1 project.

150. Personnel Available [1942 and 1944]

Correspondence with and information on persons seeking work connected with the S-1 project.

151. Planning Board [1941-43]

Memorandums and letters documenting the establishment and termination of the Planning Board.

152. Priorities [1942-43]

Correspondence concerning the A-bomb project's procurement priority ratings and the initial procurement difficulties resulting from the lack of full disclosure to the Army and Navy Munitions Board.

153. Project Technical Council [1944-45]

Agendas for the Metallurgical Project Technical Council and the Metallurgical Project Advisory Committee meetings (including membership rosters for earlier Project Technical Council meetings) and related correspondence. Two of the Advisory Council meetings dealt specifically with health problem issues. See Arthur H. Compton to Stone (Sept. 16, 1944) and minutes of a May 15, 1944 advisory board meeting.

154. Property [Dec. 1942-Feb. 1944]

Letters and a memorandum concerning the disposition of unexpended property.

155. Project Q [Aug. 1944-June 1945]

Primarily monthly statements of sums chargeable to "Project Q" and transmittal letters. Also included are notes and a letter on the nature of "Project Q" and the draft deferment issue. ("Project Q" was the code name for engineering work done on explosives for the Manhattan Project at the Bruceton, PA, Explosives Research Laboratory.)

156. R [1942-45]
 Memorandums and letters pertaining to I. I. Rabi, the Radiation Laboratory (MIT), RCA, radioactive materials, J. D. Ratcliff, G. T. Reynolds, F. Rhines, C. J. Rodden, President Roosevelt, E. L. Rose, A. E. Ruark, and Lt. Col. J. R. Ruhoff and a note on two Russian articles on the spontaneous fission of uranium and thorium.
157. R[adioactive] P[oisons] Subcommittee [1943]
 Records of the subcommittee (consisting of Conant, A. H. Compton, and Urey) formed in response to Groves' May 12, 1943, request for a report on the possible military use of radioactive materials as poisons and defense against such use by the enemy.
158. Renfro, E. M. [1940-1941]
 Correspondence with a concerned citizen about his theory of isolating U235.

Folders 159 through 201 contain reports and are filed in alphabetical order by subject or originator.

159. Reports--American Cyanamid Co., [Fldr.] No. 1, 1945
 Monthly technical progress reports from the American Cyanamid Company, Stanford Laboratories, on Contract W-7401-Eng-91, investigation no. R.U. 232 General Physical Chemistry, problem no. 64, "Production of [Crystalline] 891" (later 891A), begun on February 8, 1944, as the production phase of the project originating at the S.A.M. Laboratories of Columbia University. (The last report in the file covers the period ending Sept. 1, 1945.)
160. Reports--American Cyanamid Company, [Fldr.] No. 2, [1944]
 Continuation (in reverse chronological order) of records in folder 159, beginning with "Progress Report for April 1, 1944." (The report for the period ending Dec. 1, 1944, with the exception of the first page, is missing.)
161. Reports--British [1942]
 Correspondence concerning duplicate copies of, and a correction to, a report by J. R. Park of I. C. I. Billingham entitled "Interim Note on the Action of VI on Rubber."
162. Reports--Briggs [1942]
 A Jan. 23, 1942, request from Conant to Briggs for a report on the present status and six-month prospects of miscellaneous S-1 work not under the four major project directors, and two reports from Briggs on the National Bureau of Standards' work for Section S-1.
- 162A. Reports--Chain Reactions [1941]
 Special report on chain reactions requested by A. H. Compton (NAS Advisory Committee chairman) and submitted by Briggs (S-1 Section chairman) on Oct. 28, 1941. Also included are notes and related correspondence.
163. Reports: C-216 (Committee on Analysis of), [May and June 1944]
 Two reports, "Tentative Method of Analysis of C-216," May 8, 1944, and "Specification Method of Analysis of C-216 Under Pressure," June 7, 1944, and accompanying cover

letters.

164. Reports--Compton [1942-43]
Reports (including weekly progress reports of the Metallurgical Project for Jan., Feb., and the first week of Mar. 1942); an organization chart for the Metallurgical Laboratory (Feb. 25, 1942); A. H. Compton's organization scheme for a civilian-controlled production phase of the "Tube Alloy" Project and covering letter (June 18, 1942); and the "Final Reports of Metallurgical Projects of OSRD" under A. H. Compton, Project Leader (OEMsr-410 and associated projects), submitted on May 10, 1943.
165. Reports--Compton No. 2, 1944
Letter from Groves to Conant dated April 17, 1944, with attached "Proposed Program for Metallurgical Project, 1944-45," submitted with transmittal letter of March 30, 1944, from A. H. Compton to Groves.
166. Reports--Davidson, W. F. [June 29, 1942]
One-page memorandum from Ward F. Davidson, OSRD, to Carroll L. Wilson, OSRD, about cooling water.
- 166A. Report (Special)--Dunning [n.d.]
Report removed from file by Horan (AEC patent counsel) on Dec. 12, 1962.
167. Reports--DuPont & Company [1944]
Three "problem reports" and a final report under contract W-7412-Eng-151, "C-216--Operation of the CF Unit with Carbon Anodes," and a problem report entitled "Fluorination of Hexafluoroxylene with Cobalt Trifluoride."
168. Report--Executive Committee Members [Nov. 20, 1942]
Memorandum from Conant to members of the S-1 Executive Committee summarizing unexpected findings on purity requirements for plutonium which put the practicality and high priority of the Chicago project in question.
169. Report--Fast Neutrons [July 28, 1942]
Memorandum report from Wensel to Conant entitled "History of Cross Section of 25 as obtained from Dr. Norman Heydenberg" and handwritten notes forming the basis for this two-page report.
170. Reports--Fisk and Shockley [1940]
"A Study of Uranium as a Source of Power," by J. B. Fisk and W. Shockley of Bell Telephone Laboratories, a copy of a July 16, 1940, transmittal letter from M. J. Kelly to Jewett, and other correspondence pertaining to this document. (See folder 197 for further correspondence pertaining to this report.)
171. Reports--General, 1941-43
Examples of routine transmittal and related transaction documents that have been removed for disposal; correspondence relating to transmittal procedures for classified "A" (American) and "B" (British) reports, which shed light on the report numbering system and the report recipients; a British request regarding transmittal of reports to them; and a list of

Chicago report series as of July 11, 1942.

172. Reports--General, [Fldr.] No. 2, 1944

Further examples of routine transmittal and related transaction documents for "A" and "B" classified reports that have been removed for disposal.

173. Reports--General--1945

Further examples of routine transmittal and related transaction documents for "A" and "B" classified reports and correspondence relating to MIT reports on the effects of radiation on ionic solids.

174. Reports--Hogness [1944]

Documents written by T. R. Hogness, Director of the Chemistry Division of the University of Chicago Metallurgical Laboratory, including his outline of the future long-range program for the chemical extraction of "X metal" (U239?); his proposal for a postwar "West Point of Science"; a list entitled "Manpower Distribution in the Chemistry Division of the Metallurgical Laboratory as of April 1, 1944"; and monthly reports on the activities of the Chemistry Division dated Jan. 15 and Feb. 15, 1944.

175. Reports--Johns Hopkins University [1944-45]

Monthly technical and other research-related reports under contract W-7401-Eng-43 and associated transmittal documents and correspondence.

176. Reports--Lawrence, E.O. [1942 and 1943]

Monthly Progress Report no. 3, July 1943, covering contract W-7405-Eng-48 and a report on the "Multiple Mass Spectrograph," September 1942.

177. Report (Special)--Kellogg Company [1942]

Special Report for the Executive Committee of Section S-1, entitled "Industrial Applications of the Diffusion Method," Oct. 24, 1942. (Not filmed because of security classified status.)

178. Reports--Keyes [1942]

Correspondence from Urey, E. W. Thiele, and Beams relating to Keyes' proposals in regard to the separation of heavy water; and Keyes' MIT proposal (as originally sent to Beams at the University of Virginia).

178A. [Unnumbered Folder] Report--LRG-64 [1944]

Black notebook entitled "T. A. Data Sheet," [i.e., Tube Alloys Data Sheet], dated Feb. 26, 1944. (Not filmed because of security classified status.)

179. Reports--Massachusetts Institute of Technology [Feb.-Mar. 1943 and 1944]

Summary Report (Feb. 15-Nov. 6, 1944) on the operation of fluorine cells at MIT under contract W-7405-Eng-288 and related monthly reports (Mar.-Oct. 1944); and Informal Report no. 10.3B-15 (Feb. 15- Mar. 15, 1943) on the generation of fluorine (proposal no. 10-331, contract OEMsr-5588, dated Mar. 15, 1943).

180. Reports--Miscellaneous [1942]

Various documents, including correspondence concerning the work of Dr. Kraus at Brown University; minutes of the meeting of the Committee on Melting, Sept. 10, 1942; OSRD Report 354 ("Radio Detector") Jan. 20, 1942; and three appendices to an unidentified report (probably by A. H. Compton): Chemical and Metallurgical Work at Iowa State College, Counter Construction and Development Work and Neutron Cross Section Measurements at New York University, and The Measurements of Cross Sections as a Function of Neutron Energy at Cornell University (1942).

181. Reports (Special), Murphree, E. V. [Oct. 1942]

Copies of two reports on the centrifuge program presented at the Oct. 23, 1942, meeting of the S-1 committee at the Westinghouse Research Laboratories in Pittsburgh by Z. G. Deutsch of the Standard Oil Development Company, and Conant's copy of the transmittal letter to Murphree, who was in charge of the review of the centrifuge project.

182. Reports--Murphree [Fldr.] No. 1, 1942

Reports on the centrifuge separation project and the diffusion project (including progress reports and plant reviews); mathematical analyses; report of a visit to Trail, BC, in November 1942; design of countercurrent separation plants; a summary of available supplies of uranium as of Feb. 26, 1942, listing three major sources and their projected output; and accompanying transmittal letters.

183. Reports--Murphree [Fldr.] No.2, 1943

Monthly progress reports on the gas centrifuge pilot plant of Bayway, NJ, and centrifuge runs at the University of Virginia; and periodic reports on the Trail, B.C., heavy water project (with accompanying transmittal letters).

184. Reports--Murphree [Fldr.] No. 3, 1944

A report, the findings of which were obtained with the cooperation of Columbia University, comparing mass spectrometer and alpha particle counting methods of analysis; and a progress report on the gas centrifuge pilot plant for December 1943 (with accompanying transmittal letters).

185. Report--Naval Research Laboratory [1943]

S-1 Executive Committee reports covering NRL work on the separation of uranium isotopes by liquid thermal diffusion and accompanying transmittal letters. (See also folders 137, 138, and 199).

186. Report--Princeton Project [1942-44]

Impressions of J. Slepian (Westinghouse Research Laboratories) concerning the Princeton project and his thoughts as to its relationship to the general program of separation by electro-magnetic means (1942); the Princeton project's "Final Report on the Resonance Absorption in Uranium" (June 11, 1943); and the Princeton project's "Special Information Report" of Oct. 11, 1944. (See also folder 190.)

187. Reports--Purdue University [1944]

Monthly technical reports on fluorocarbon research at Purdue University (dated Apr. and Oct.-Dec. 1944).

188. Reports--Rosen [May 1943]
Memorandum by Raphael Rosen (Kellogg Corp.) concerning the May 10, 1943, meeting to discuss arrangements for production of fluorolubes and the results of DuPont's search for alternate coolants.
189. Reports--Sites [1942]
Correspondence and reports relating to the selection of the Oak Ridge, TN, site and proposed plant organization charts.
190. Reports--Slepian, J. [1943]
Two memorandums and a letter from Slepian to Conant on the ionic centrifuge. (See also folder 186).
191. Reports--S-1 Program [June 1942]
Correspondence concerning the transfer of the S-1 Program production phase to the Army (including a June 17 letter from Bush to the President submitting a report on the project and requesting his approval of the transfer); and a June 19 letter from Bush to Gen. W. D. Styer indicating the President's approval and Bush's plans to set up an Executive Committee to carry on the OSRD scientific research and pilot plant experimentation associated with the production phase of the project.
192. Reports--Captain Smith [1942]
"Notes on Weight and Space of Uranium Ship Propulsion Plant," by Capt. Lybrand Smith, USN, January 1942, and attached correspondence.
193. Reports--Spedding [Oct. 1943]
Two-page progress report from F. H. Spedding, project director of the Ames Laboratory research and development program. The program was involved in fundamental chemical and metallurgical research on plutonium and uranium and the development of a dry fluoride process for the separation and purification of plutonium (research problems of particular interest to Los Alamos).
194. Reports--Standard Oil [Sept.-Dec., 1944]
Three reports from Standard Oil of Indiana's No. 4 Process Laboratory: M-1, Exchange Experiments; M-2, Application of Carl Fischer Analysis to Overhead Polymer Samples from the Pilot Plant; and M-3, McMahon Packing. Covering letters are also included.
195. Report--C. A. Thomas [1943-44]
A September 1943 report to Groves and a January 1944 report to Conant from Charles Allen Thomas, Los Alamos.
196. Report--Thompson, W. I. [1942]
Memorandum by W. I. Thompson (Standard Oil Development Company) discussing the separation potential as applied to cascade problems encountered in diffusion and centrifuge developments and accompanying correspondence.
197. Report--Uranium [1940 & 1943]
Correspondence concerning the 1940 Fisk and Shockley Report, "A Study of Uranium as a

Source of Power." (See also folder 170.)

198. Reports--Urey, 1942

Monthly progress reports from Urey on S-1 work under his direction (February-December 1942) and a note on "Material to be Included in Dr. H. C. Urey's Report to Central Committee in Washington" (Dec. 9, 1942) concerning laboratory design and shop facilities.

199. Reports--Urey 1944

Various reports from the Columbia University S-1 work submitted by Urey, including a February 1943 "Memorandum on the Thermal Diffusion Method as Carried Out by the Naval Research Laboratory," a report on the water distillation process for concentration of deuterium by Hutchison and Lyon, and a report on photo-chemical experiments pertaining to the separation of uranium isotopes by Simon Freed.

200. Reports--White House [June 1942]

Background correspondence from Styer to Bush pertaining to Bush's Jun. 17, 1942, letter to the President concerning the transfer of the S-1 Project production phase to the Army (see folder 191); a Jun. 2, 1942, follow-up letter from Bush to the President; and a Dec. 15, 1942, memorandum from Conant to Bush concerning a report to the President on the state of the project.

201. Reports--WPB [War Production Board, Apr. 1942]

War Production Board memorandum on uranium supplies and related correspondence.

202. Rosen, Raphael [1942-44]

Correspondence with Rosen of the Standard Oil Development Company relating to procurement of various chemicals and other matters.

203. Sa-Sn [1942-45]

Various requests to academic and other OSRD-related research institutions for the release of scientific personnel whose surnames begin with the letters "Sa-Sn;" cross reference sheets to the San Francisco Charter of the United Nations; correspondence concerning "scarce critical materials"; correspondence with or about G. Scatchard, P. W. Schutz, H. A. Shadduck, C. O. Shane, Shell Chemical Company's dew point instrument, and C. S. Smith; an article by G. T. Seaborg; and a memo by Shurcliff concerning "Possible Peacetime Uses of Uranium Fission."

204. So-Sz [1942-45]

Requests for the release of scientific personnel whose surnames begin with the letters "So-Sz" and correspondence with Spedding, Stimson, and Maj. Gen. G. V. Strong.

205. Salaries [1942]

Correspondence pertaining to Grosse's salary, salaries in general, and Chicago Project salaries (including those of Wigner, Fermi, and Whitaker).

206. Schlesinger, H. I. [1943-44]

Correspondence with Schlesinger (Chicago Metallurgical Project) concerning patent rights

and the return of project-related research notebooks to the OSRD Office, research information on borohydrides, and Conant's request for information on personnel hired under contract OEMsr-368.

207. Scientific Personnel Committee [1942]
One letter relating to the release of Edwin McMillan for the Chicago Project.
- 207A. Security [1941-45]
Correspondence about security matters involving Briggs, Bush, Conant, Compton, Fogg, Stewart, and Wensel, among others. (Not filmed because of security classified status.)
208. S-1 Executive Committee Members [1942 and 1944]
Memorandums from Conant to S-1 Executive Committee members concerning the possibility of using molecular distillation as a method of uranium isotope separation, Slepian, termination of the centrifuge project, and doubts about the practicality of using plutonium.
209. Sites [Dec. 1941-Jan. 1942]
Correspondence relating to the question of a centralized site for S-1 work, along with the December 1941 reorganization of the S-1 project.
210. Slepian, J. [1942-45]
Correspondence about the ionic centrifuge being developed by Slepian at the Westinghouse Research Laboratories in East Pittsburgh. (See also folders 186, 190, 208, and 213).
211. Smith, H. T. [1944-45]
Correspondence from various chemical and manufacturing companies concerning the availability of elemental fluorine and various fluorine compounds for use by commercial companies.
212. Smith, Lloyd P. [1942]
Correspondence and a brief report written by Lawrence relating to Lloyd P. Smith and the development of a magnetron for separating uranium isotopes; the magnetron's failure to yield anticipated results, and its removal from the S-1 program.
213. Smyth, H.D. [1942-45]
Correspondence among Smyth, Groves, and Conant concerning the manuscript of the Smyth Report; Smyth's review of Slepian's ionic centrifuge; correspondence concerning Compton's offer to Smyth to become assistant director of the Chicago project; matters pertaining to Princeton contracts (OEMsr-260 and OEMsr-297) and the closing out of the Princeton project (including staff movements and a list of employed physicists); the S-1 Committee vote on cancellation of the Princeton project; and personnel and draft deferment issues relating to the Princeton project. (See also folders 186, 190, 208, and 210.)
214. Stewart, I. [1942-44]
Correspondence involving Stewart (Secretary of the S-1 Executive Committee) concerning such matters as just compensation to the Stuart Oxygen Company for its war efforts; and the status of, and requests concerning, various OSRD contracts, disposition of equipment,

and similar matters.

215. Stone and Webster [1942]

This file includes Stone and Webster's Sept. 11, 1942, analysis of the superiority of Smyth's isotron process over Lawrence's process, and Nichols' July 23, 1942, letter to Conant announcing that Stone and Webster was the engineering firm chosen as architect-engineer-manager for the design and construction of the DSM (later Manhattan Engineer District) project.

216. Styer, W. D. [1942-43]

Materials under General Styer's cognizance concerning the DSM project (including lists of German scientists possibly working on the A-bomb); a Feb. 13, 1943, memorandum from Bush to Styer concerning voluntary press censorship on certain war-related subjects and the possibility of making atomic energy one of them; an electrostatic copy (white on black) of Bush's letter of June 19, 1942, to Styer concerning the transfer of the production phase of S-1 to the Army; correspondence on site selection; and Bush's Mar. 16, 1942, letter of introduction for Styer to present to Conant. (See also folders 191 and 200).

217. Szilard, Leo DSM [1939 and 1942-44]

Szilard correspondence concerning requested meetings with Bush on materials acquisition delays under OSRD management and how the project might be better managed; copies of memorandums submitted to Briggs on Oct. 26, 1939, to the President in October 1939, and letters to Fermi on July 3 and 8, 1939, proposing an experimental chain reaction pile; and a handwritten note to Bush from Conant (n.d.) accusing Szilard of "building a record on the basis of which to make a [patent] `stink' after the war is over."

218. T [1943-45]

Correspondence with or about Tench of New York, Inc. and the Rava electric arc torch developed there; Tennessee Eastman Corp.; E. W. Thiele (Standard Oil Development Co.); J. G. Thompson (National Bureau of Standards); R. W. Thompson (Princeton University); thorium deposits; and a proposed conference on the toxicity of fluorine (to be sponsored by the Public Health Service as a cover for OSRD interest in the subject).

219. Thomas, C. A. [1943-45]

Thomas (Monsanto Chemical Company) correspondence regarding issues connected with the postwar operation of Clinton Laboratories; a negative reply to an Aug. 2, 1944, request from Conant to spend two months at Los Alamos; Report No. 6 (Apr. 8, 1944), Report No. 4 (Jan. 4, 1944), and an Aug. 23, 1943, letter concerning work required on the purification and the metallurgy of plutonium.

220. Tolman, R. C., March-December 1943

Correspondence concerning Tolman's work as a liaison with the British, other matters connected with the A-bomb project in his capacity as vice chairman of NDRC, and the possible work of Urey's group on boron; a draft of regulations governing exchange of information between Chicago and Los Alamos; and answers provided by the Chicago project to Oppenheimer's questions of June 3, 1943.

221. Tolman, Dr. R. C. 1944-45
Tolman correspondence relating to thorium and U233, a possible contract for betatron work with the General Electric Company, personnel and laboratory organization at Los Alamos (Tolman to Groves, May 12, 1944, and attached appendix are key documents), tolerances in connection with the construction of piles at Hanford, WA, and identifications for 15 men connected with bombing tests.
222. Tolman--L[os] A[lamos] Special File [1943]
Correspondence concerning the use of U233 versus plutonium, experiments for the X pile, responses of Conant and Tolman to Groves' request that they act as his advisors on the atom bomb project, work on boron, and correspondence with Groves, Compton, Teller, Urey, and Conant.
223. Travel--Briggs, L. J. [Feb. 12, 1942]
Request to permit Briggs unlimited travel anywhere within the continental U.S. on his travel authorization. (Not microfilmed.)
224. Travel--General [1942]
Same as above for Conant, Compton, Murphree and Lawrence; and other miscellaneous travel authorization matters. (Not microfilmed.)
225. Travel--Murphree [1943]
Travel authorization requests for E. V. Murphree. (Not microfilmed.)
226. Travel--Urey, H.C. [1942]
Correspondence pertaining to a travel authorization for Urey. (Not microfilmed.)
227. Tuve, M. A. [Aug. 14, 1941]
Letter from Bush to Tuve explaining why he is not assigning Tuve to the uranium project.
228. U [Nov. 10, 1942]
Letter concerning clearance notice for Universal Oil Products Company.
229. Urey, H. C., [Fldr.] No.1, October 11, 1940-December 1942
Urey correspondence relating to his centrifuge project advice; group leaders and personnel involved in Columbia's diffusion and deuterium work; administrative matters; Conant's policy of non-disclosure of information on fluorocarbons; Urey's opinion on keeping universities in charge of research work during the production phase of the atom bomb project; relations with the British; laboratory planning for, and the desirability of, moving the Columbia team to site X (Oak Ridge, TN); the priority of the atom bomb project compared to that of the synthetic rubber project; the heavy water project and scientific advice on the project; Urey's membership on the uranium committee and in the uranium section of NDRC (1941); and Urey's appointment to the Uranium Committee (1940).
230. Urey, H. C., [Fldr.] No. 2, January 1943-45
Correspondence concerning the Tube Alloys project in England and its organization; Urey's January 1944 assessment of diffusion vs. centrifuge; centrifuge project information; personnel acquisition for Columbia; the heavy water project (the major portion of this

folder); the photochemical process of uranium isotope separation; S-1 Executive Committee matters; the Western Electric subcontract for work on barriers and related patent disagreements; U.S. intelligence efforts relating to the Germans' work on uranium fission; effects of the break-off of U.S.-British cooperation in relation to the heavy water project and Halban's work thereon; personnel and contract matters; Conant's view that Grosse's trip to Russia would be a negligible security risk; pressure to discontinue Lawrence's electromagnetic method of separation; and various other administrative matters.

231. V [1942-44]

Correspondence concerning the release from universities of personnel whose surnames begin with "V"; discussing the uranium question with Dr. Velander without giving away OSRD's interest in the matter; cancellation of the University of Virginia contract and disposition of its cyclotron; and a Von Heppel cross reference sheet.

232. Visits Authorized [Sept. 1941 - May 1943]

Correspondence concerning visitor authorization procedures and specific visits by insiders and outsiders to members of S-1 projects and approved topics of discussion, and completed visit request and visit authorization forms.

233. Vouchers [1942-43]

Vouchers covering equipment, patent payments, moving expenses, salary and reimbursements to contractors, and related correspondence.

234. W [1942-45]

Correspondence with university officials concerning the release of persons whose surnames begin with the letter "W"; and concerning persons and subjects beginning with "W" (i.e., J. A. Wheeler's agreeing to serve on the uranium committee, Dr. Frank G. Whitmore congratulating Conant on the atomic bomb, Louis A. Wiebe on correspondence substantiating Dunning's role in the invention of metal barriers, Wigner on future administrative decisions concerning the role of the Chicago metallurgy project and the clearance of a Mr. Lowen, and R. R. Williams of Bell Labs concerning information on a lubricant developed under an S-1 contract with the Standard Oil Development Company).

235. Warren, Stafford [Mar. 1943-Mar. 1944]

Correspondence concerning Warren's work on health-related issues of the A-bomb project (including the "defense against the use of fluoride products as a military weapon" and commendation for experimentation with gamma-emitting radioactive materials), work on the "dust" problem conducted at the University of Rochester under his direction, an attempt to get the Public Health Service (as a cover for OSRD) to conduct a symposium on the "Industrial Hazards of Fluorine and Some of Its Simpler Compounds," and an inquiry about a study of the physiological effects of phosgene. (See also folders 84 and 218.)

236. Wensel, H. T. [1942-45]

Correspondence concerning reports (final and otherwise) from various project contractors, other administrative matters with which Wensel was connected (as Technical Aide to the S-1 Executive Committee and later as Chief of the Technical Section of the Manhattan District in Knoxville, TN), and correspondence relating to his appointment as Technical Aide.

237. Westinghouse [Feb. 1942]
Correspondence among S-1 Committee officials (and with Westinghouse representatives) concerning a proposed contract with Westinghouse for the production of uranium metal.
238. Westinghouse Material Received from Chubb [May 1941-June 1942 and May 8, 1946]
Materials received in May 1946 from L. W. Chubb (Director of the Westinghouse Electric and Manufacturing Company and a consultant to OSRD). Included are 1941 materials pertaining to the National Academy of Sciences' Advisory Committee on Atomic Fission, of which Chubb was a member; and 1942 documents pertaining to the Planning Board, on which he also served. The documents consist of minutes of the Advisory Committee meeting of Oct. 21, 1941, (withdrawn because of security classified information); reports and various drafts of reports of the NAS committee submitted to Jewett (President of the National Academy of Sciences) relating to the feasibility of producing an atomic bomb and Fermi's June 29, 1941, report entitled "Some Remarks on the Production of Energy by a Chain Reaction in Uranium"; and Planning Board meeting minutes and reports prepared by Chairman Murphree (vice president of the Standard Oil Development Company) for Bush as head of OSRD, relating to the centrifuge and diffusion processes of separating U235, the production of heavy water, the erection of pilot plants for these projects, and the acquisition of supplies of uranium oxide and metallic uranium. (Chubb's letter to Cleveland Norcross of May 8, 1946, first item in file, lists the contents of this file. Other related folders include numbers 1, 15, 16, 43, 130-132.)
239. Wood, R. W. [July 25-Aug. 11, 1942]
Correspondence, the majority of which remains classified, about an R. W. Wood, a project member under the supervision of Urey.
240. X, Y, Z [Jan.-Feb. 1944]
Cross reference to X-band radio fuses and correspondence concerning tests on an explosive device invented by Wendell Zimmerman.

APPENDIX B

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(Numbers refer to folders.)

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