

DONALD COOKSEY

UNIVERSITY OF CALIFORNIA PHYSICISTS, 1938 / Staff of the Radiation Laboratory and associated physicists under the yoke of the 60-inch cyclotron magnet.

Left to right

row 1: J. H. Lawrence, R. Serber, P. C. Aebersold, F. N. D. Kurie, R. T. Birge, E. O. Lawrence, D. Cooksey, A. H. Snell, L. W. Alvarez, P. H. Abelson.

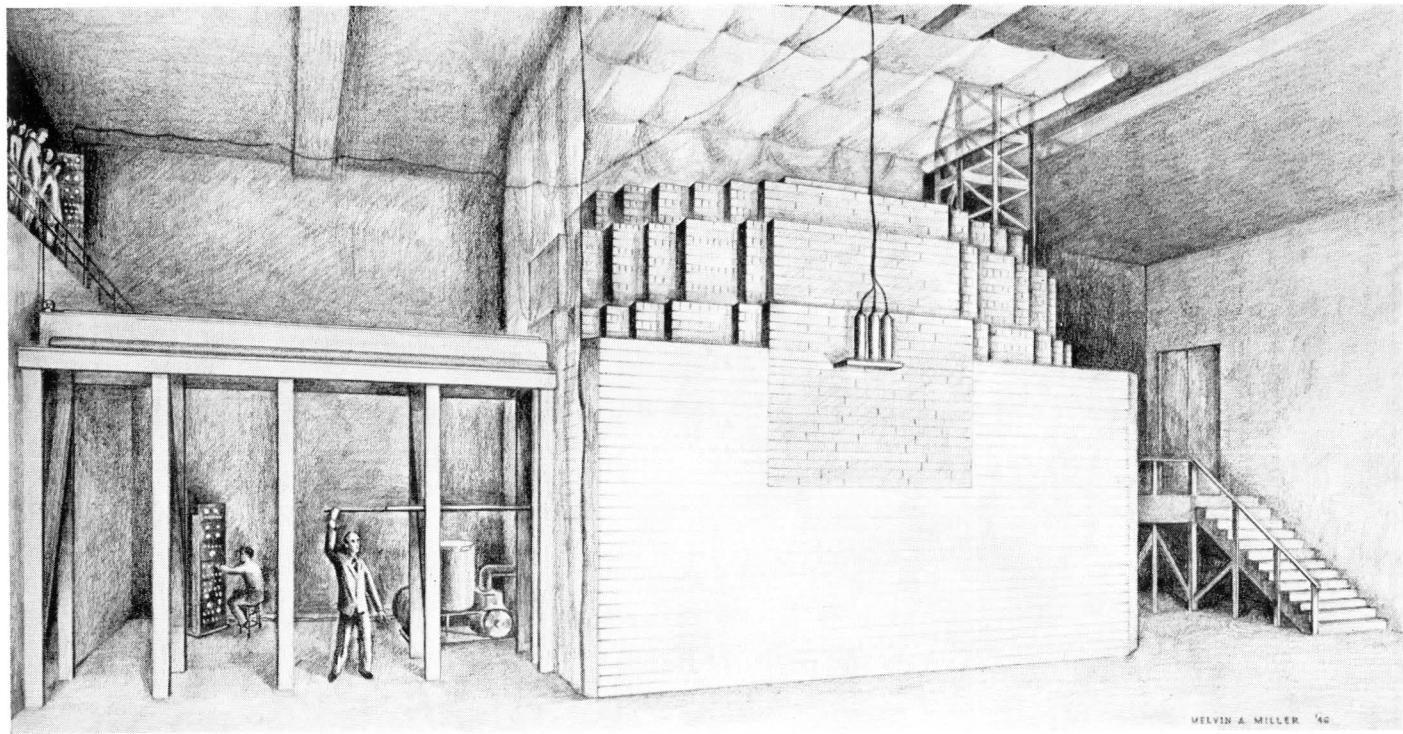
row 2: J. G. Backus, A. Langsdorf, J. G. Hamilton, S. J. Simmons, E. M. McMillan, R. R. Wilson, W. M. Brobeck, E. M. Lyman, J. J. Livingood.

row 3: D. H. Sloan, R. Cornog, M. D. Kamen, W. B. Mann, J. R. Oppenheimer, E. S. Viez, D. C. Kalbfell, W. W. Salisbury.



DONALD COOKSEY

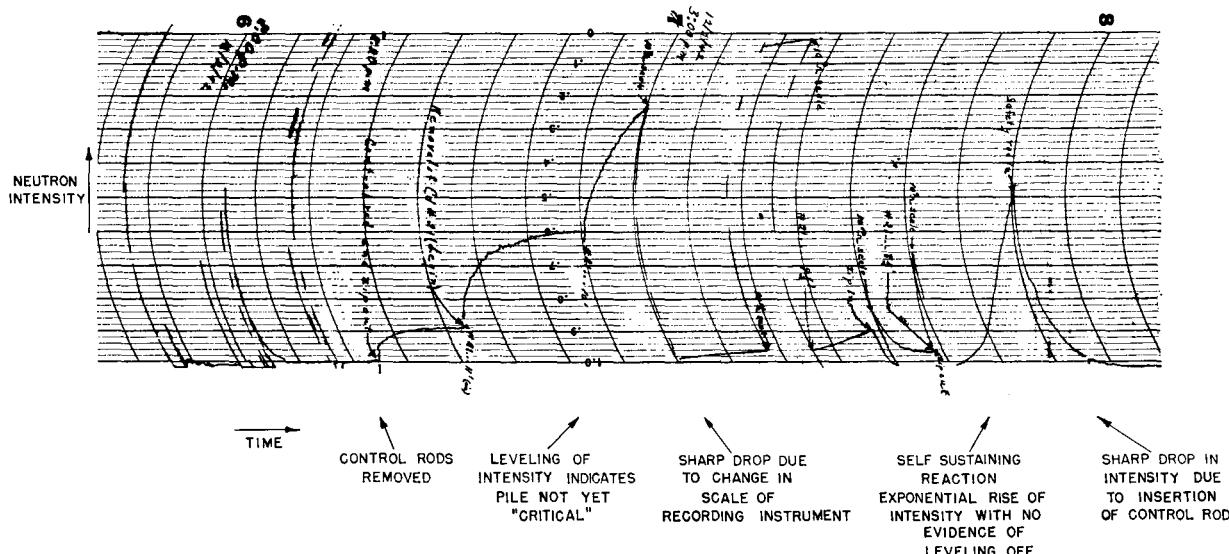
SCIENTIFIC LEADERS OF THE S-1 PROJECT / Considering the feasibility of the 184-inch cyclotron project at Berkeley, March 29, 1940.
Left to right
Ernest O. Lawrence, Arthur H. Compton, Vannevar Bush, James B. Conant, Karl T. Compton, Alfred L. Loomis. Karl Compton and Loomis served S-1 only occasionally.



MELVIN A. MILLER '40
ARGONNE NATIONAL LABORATORY

THE STAGG FIELD PILE, DECEMBER 2, 1942: AN ARTIST'S CONCEPTION / This first self-sustaining chain-reacting pile contained almost 400 tons of graphite, 6 tons of uranium metal, and 58 tons of uranium oxide. The figure in the foreground is withdrawing a control rod.

DEC. 2 1942 START-UP
OF
FIRST SELF-SUSTAINING CHAIN REACTION
NEUTRON INTENSITY IN THE PILE AS RECORDED BY A GALVANOMETER



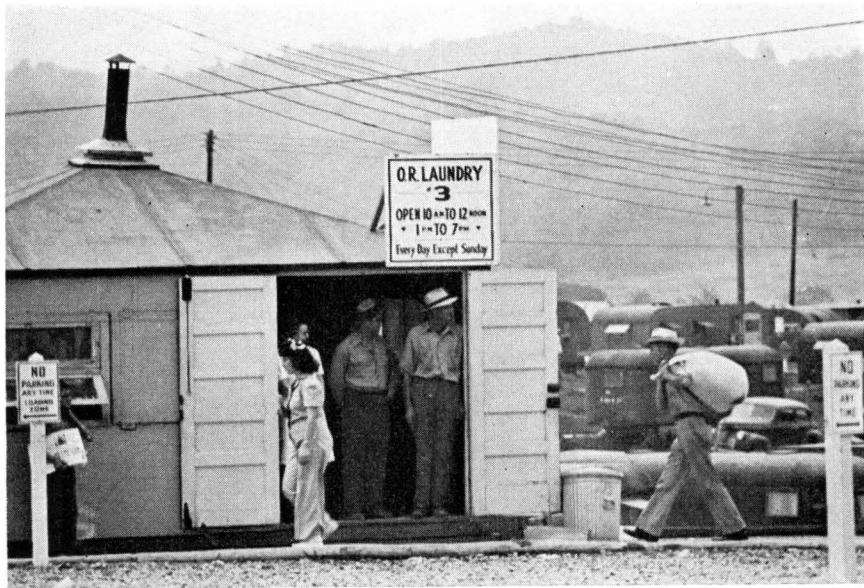
ARGONNE NATIONAL LABORATORY

RECORD OF FIRST SELF-SUSTAINING CHAIN REACTION, DECEMBER 2, 1942 / Neutron intensity in the pile as recorded by a galvanometer.



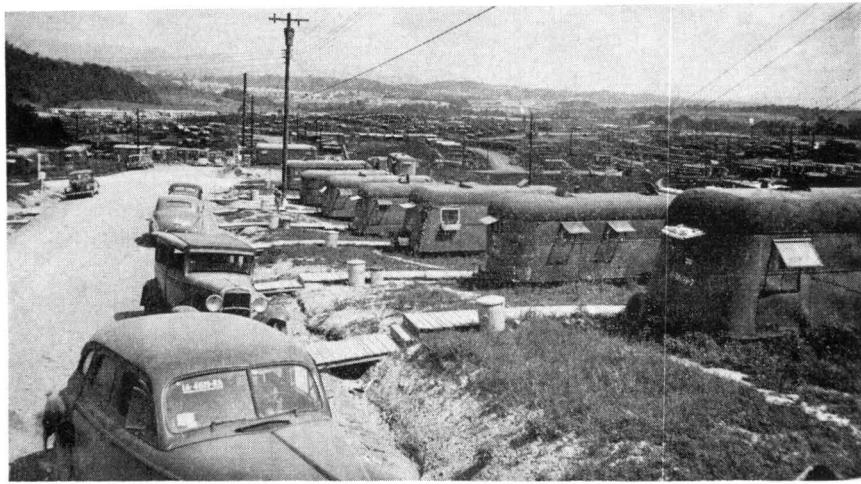
U. S. ARMY

JACKSON SQUARE, THE OAK RIDGE SHOPPING CENTER / Across the Oak Ridge Turnpike in the background is "the castle," headquarters of the Manhattan Engineer District.



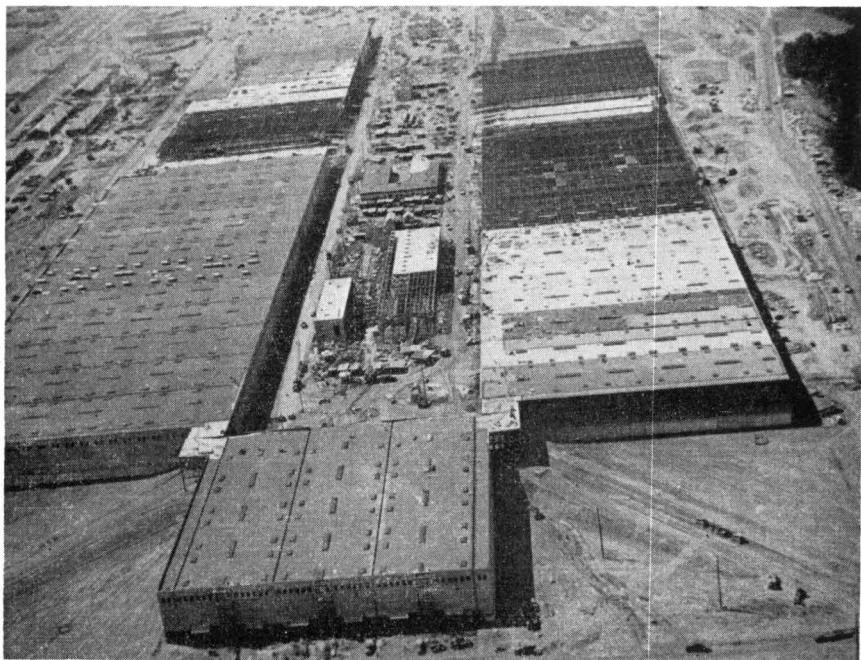
U. S. ARMY

LAUNDRY FACILITIES AT OAK RIDGE / Wartime Oak Ridge had all the bustle and inconvenience of a frontier boom town.

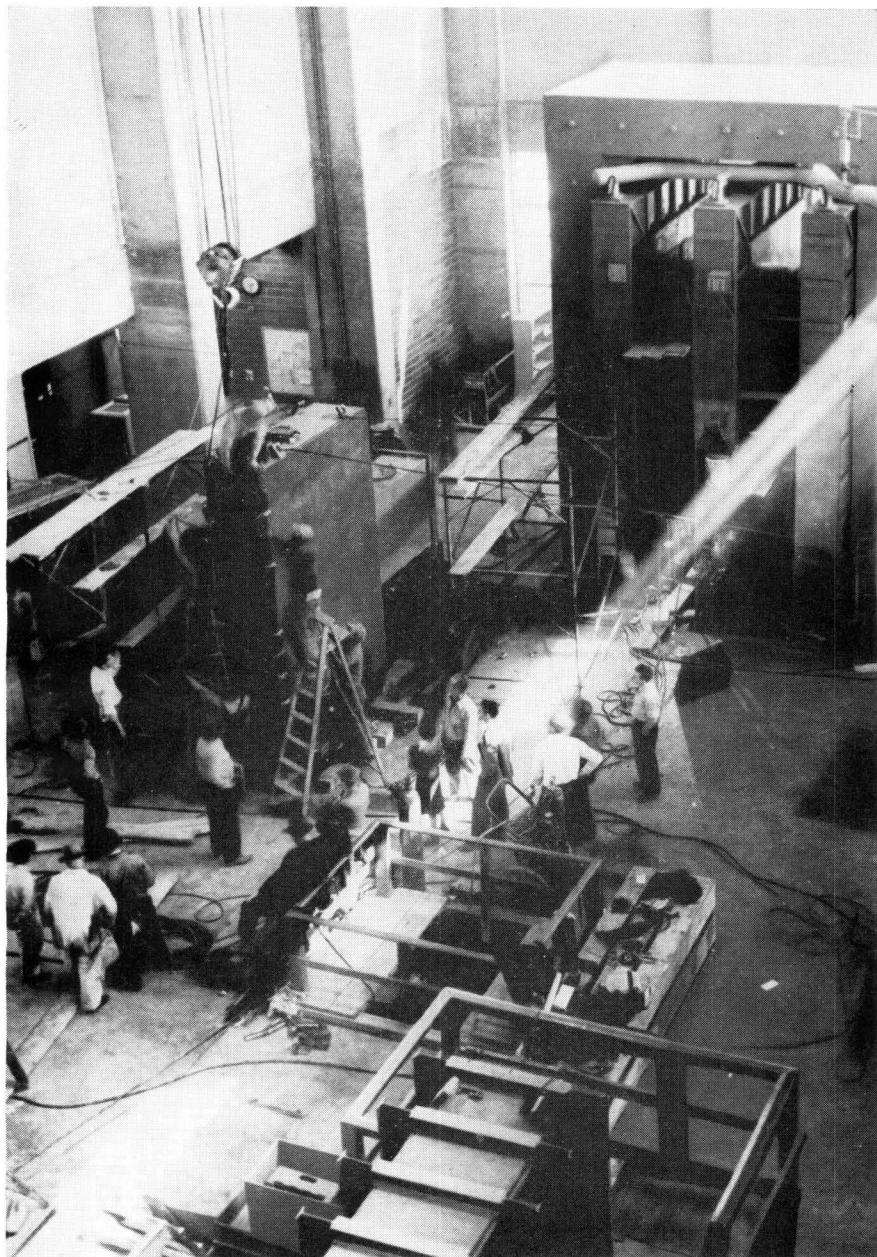


U. S. ARMY

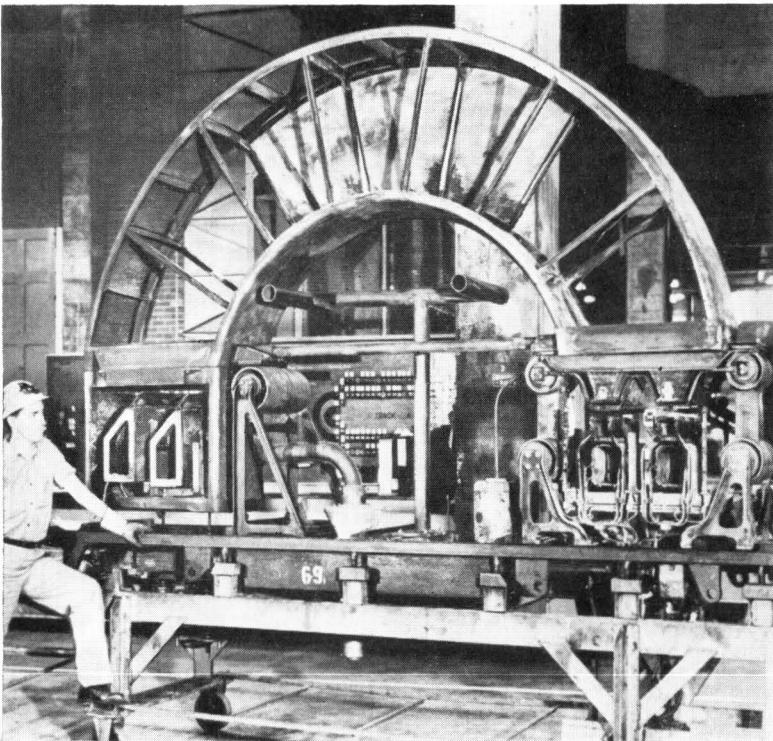
TRAILER CAMP AT OAK RIDGE / More than 1,000 trailers served as supplemental housing.



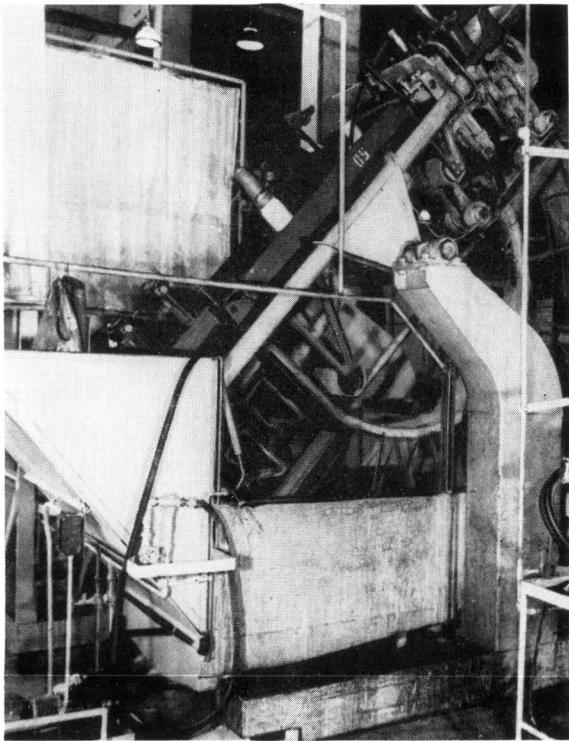
K-25, THE GASEOUS-DIFFUSION PLANT, UNDER CONSTRUCTION / The U-shaped building contained thousands of pumps and converters for concentrating uranium 235. Service facilities are in the center.



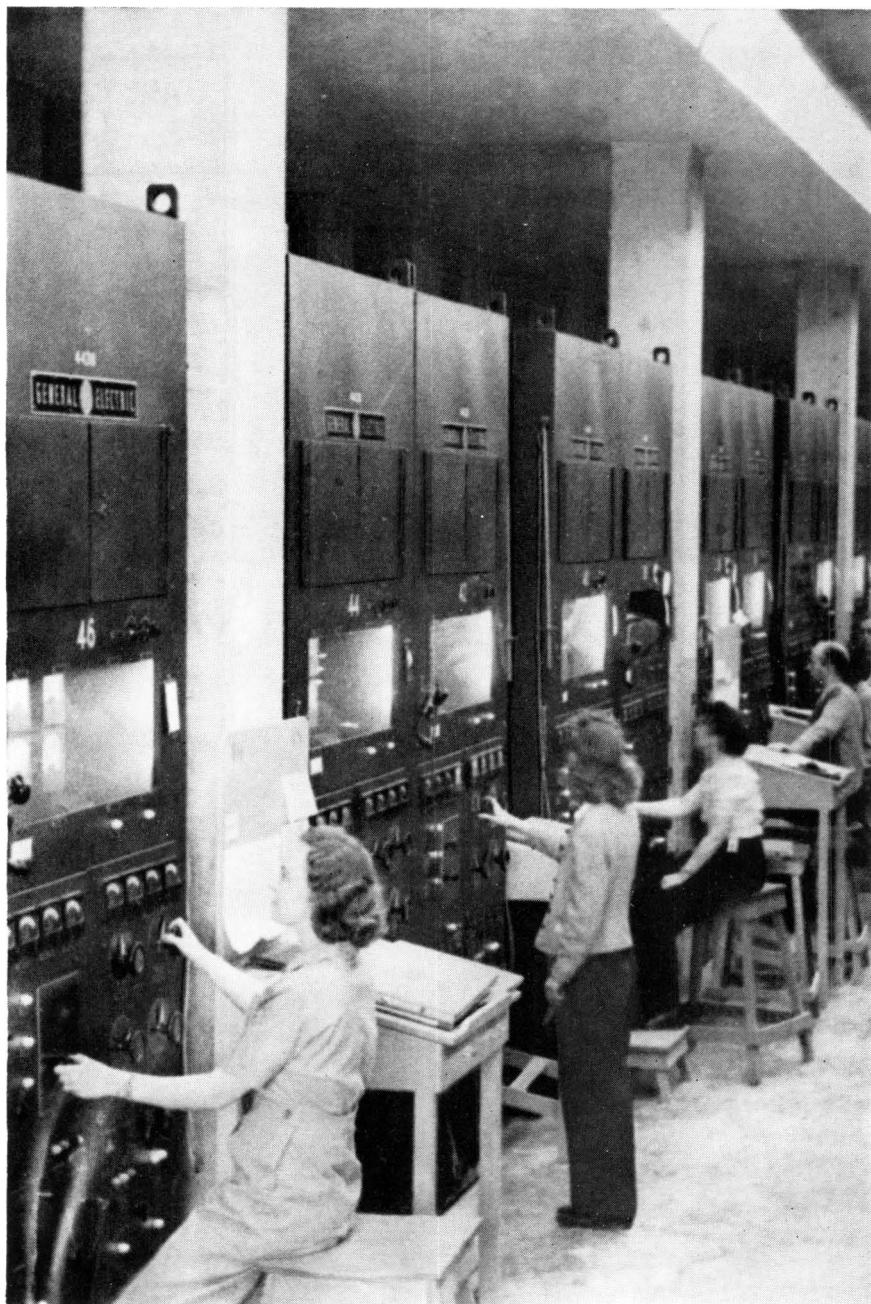
EXPERIMENTAL RACETRACK (XAX) AT Y-12, OAK RIDGE / This unit was built in the summer of 1943 to test the Alpha tracks for the electromagnetic process and to train operators. Workmen are preparing a tank for insertion between the magnet coils.



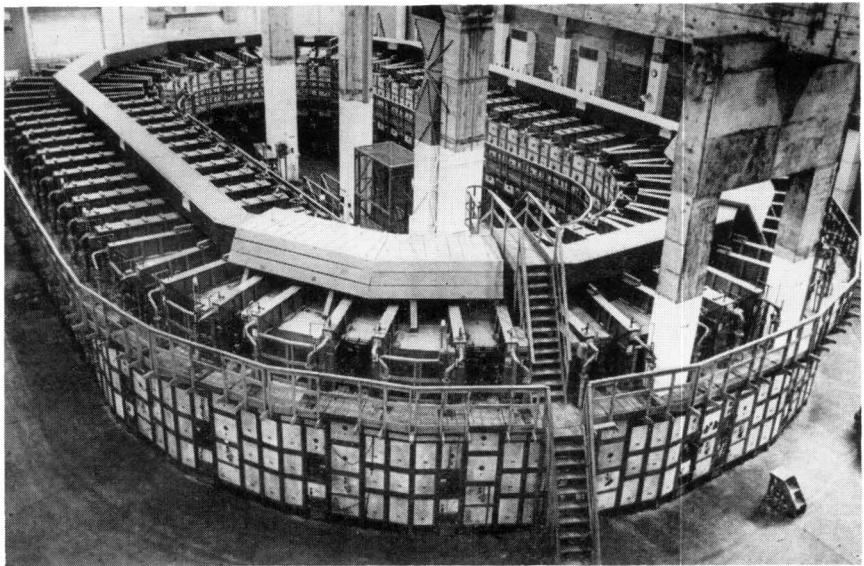
ALPHA I TWO-BEAM UNIT / This unit rests on its door on a storage dolly. The covers have been removed to show the double source at the right and the two receivers at the left.



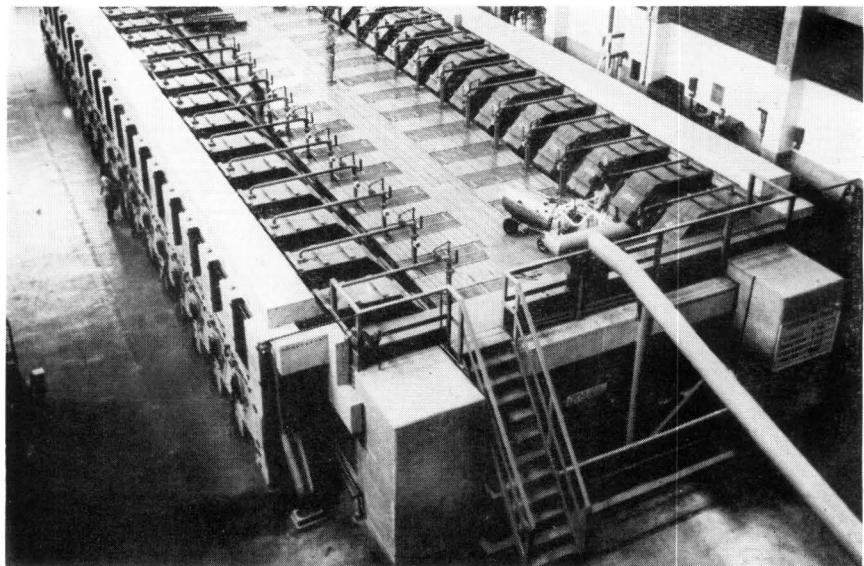
ALPHA I UNIT IN WASHSTAND / Part of the process of recovering the uranium-tetrachloride charge that did not reach the receiver.



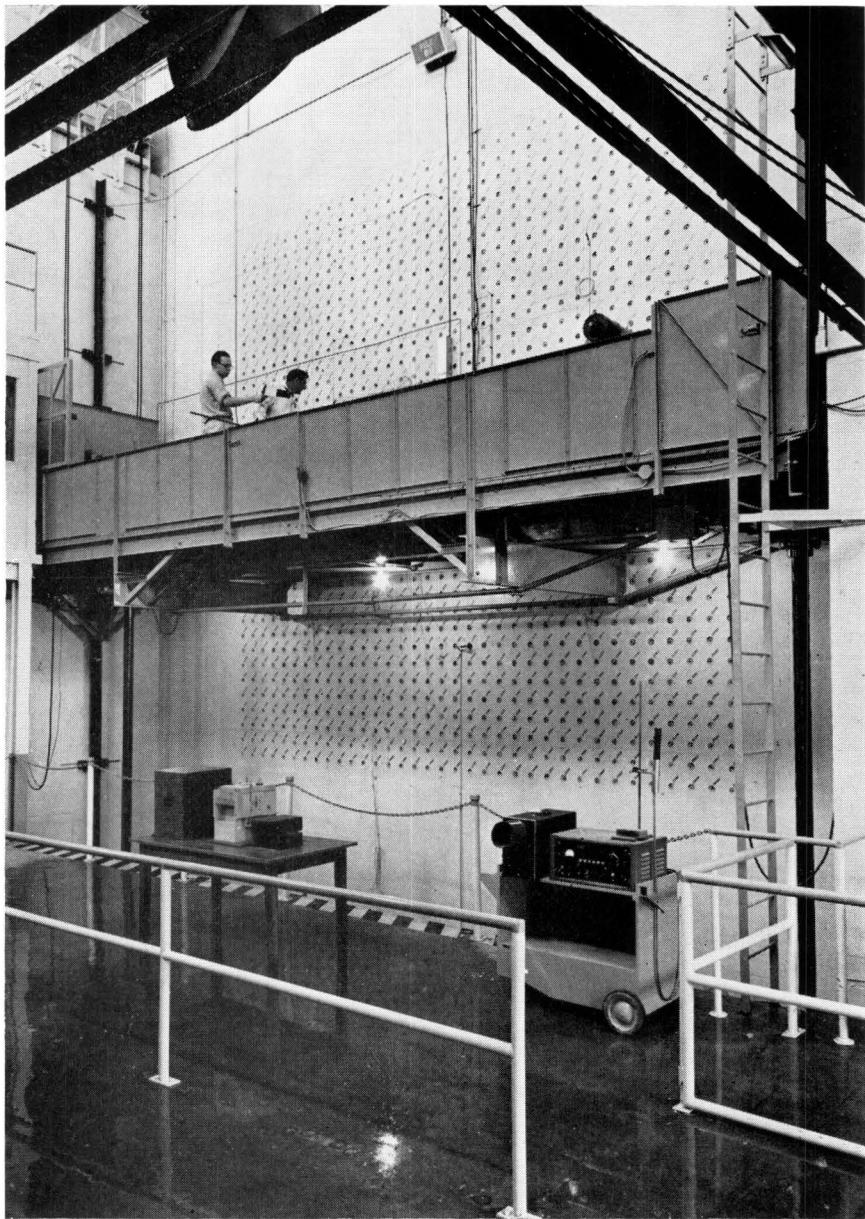
ALPHA I CONTROL ROOM / Each operator tends two control panels, one for each tank. By the spring of 1945, almost 22,000 workers were required to keep Y-12 in operation.



ALPHA I RACETRACK / The reason for the name is obvious. The protruding ribs are the silver-wound magnet coils. The boxlike cover around the top contains the solid-silver bus bar.



BETA RACETRACK / Compare with the Alpha I racetrack, noting the rectilinear arrangement and the smaller scale of the equipment.



OAK RIDGE NATIONAL LABORATORY

FACE OF THE CLINTON AIR-COOLED EXPERIMENTAL PILE (X-10) / This natural-uranium-and-graphite pile went critical early on the morning of November 4, 1943. Visible on the pile face are the ends of the 1,248 channels in which the uranium slugs are inserted.



OAK RIDGE NATIONAL LABORATORY

LOADING X-10 / The worker is inserting the aluminum-clad, natural-uranium slugs.



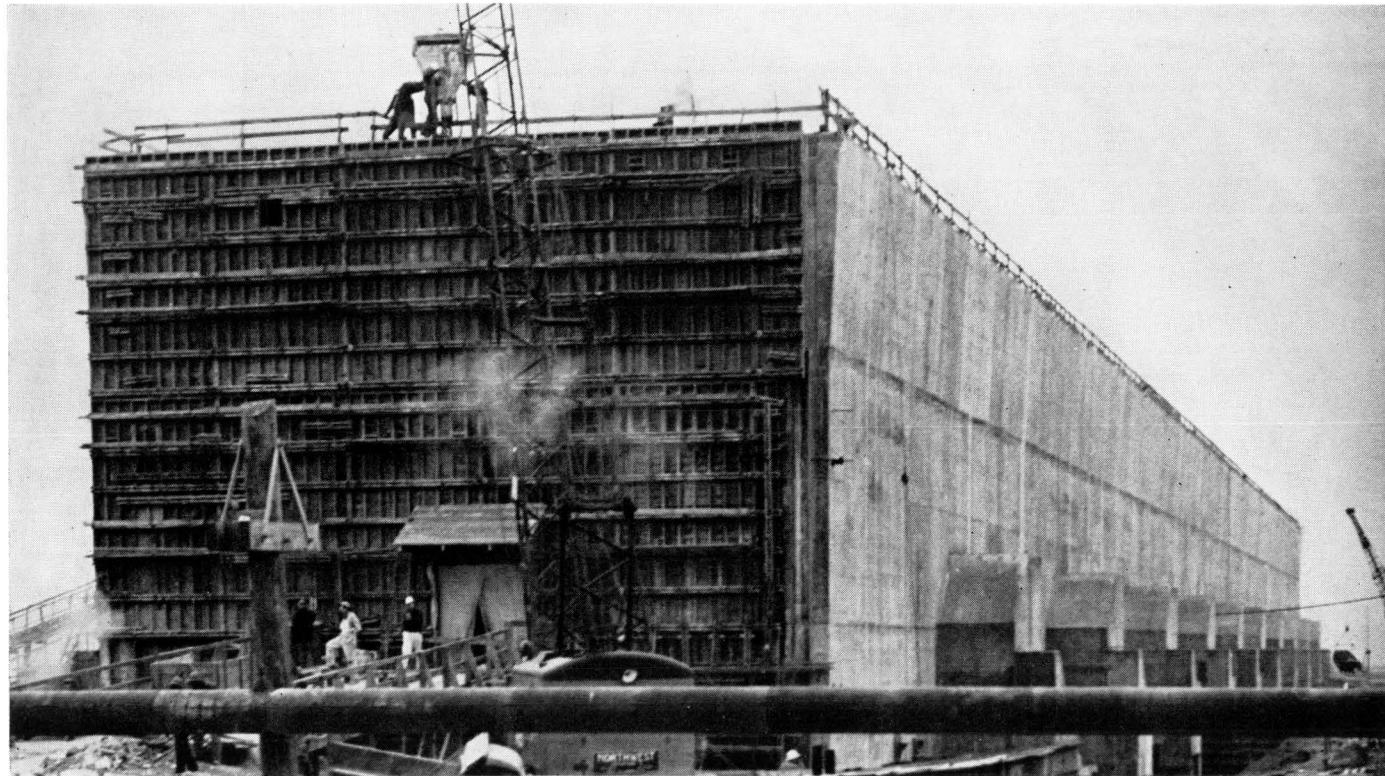
300 AREA AT HANFORD / Here du Pont manufactured uranium slugs and tested materials for the production piles. Slugs were fabricated in the one-story masonry building in the center background. Materials were tested in a 30-watt pile in the large vented building at the upper left.



FILTER PLANT FOR THE HANFORD D PILE, JUNE 20, 1944 / The water-treatment system for each of the three production piles was comparable to a large municipal plant. The power plant is in the background and the pile building out of view to the right.

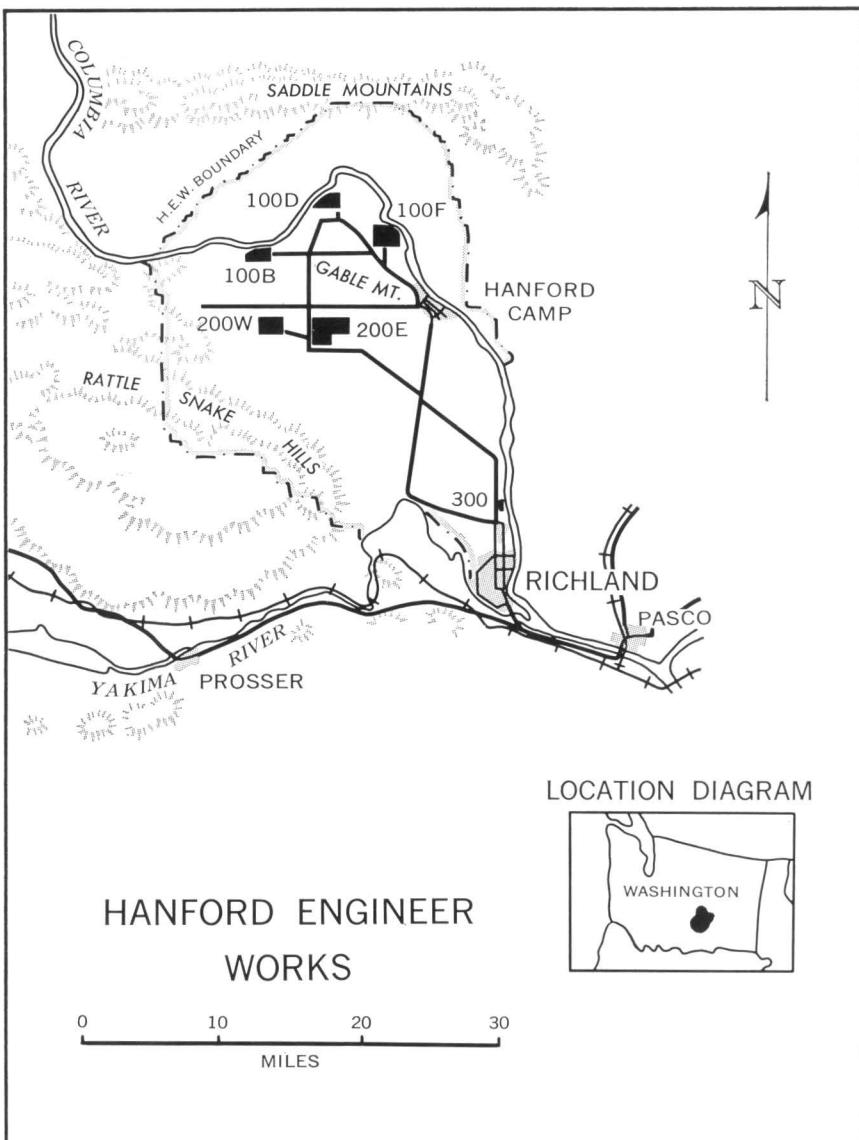


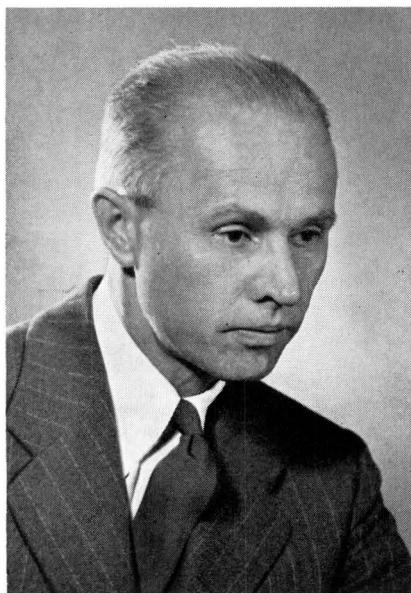
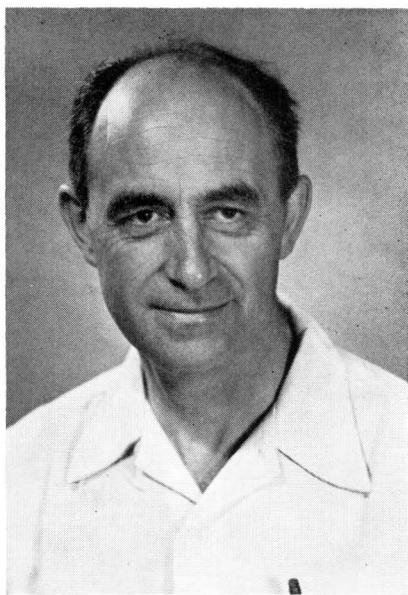
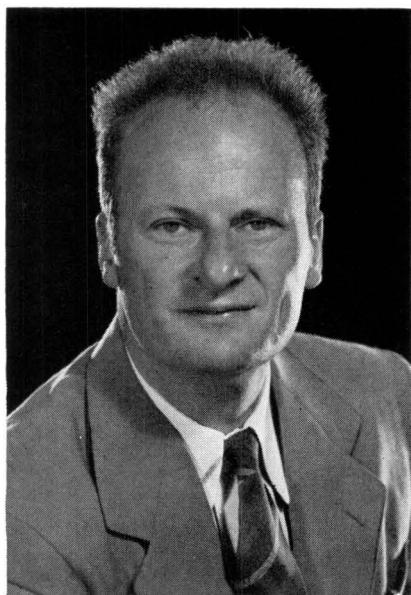
HANFORD D PILE AND SUPPORTING FACILITIES, JUNE 20, 1944 / The pile building, which towered 120 feet above the desert, is the concrete structure in the center. Behind it lies the water-treatment facilities. The Columbia River and the Wahluke Slope are in the background.



U. S. ARMY

CHEMICAL SEPARATION BUILDING UNDER CONSTRUCTION AT HANFORD / Here the bismuth-phosphate process was used to separate plutonium from irradiated uranium. The completed building was 800 feet long, 65 feet wide, and 80 feet high.





LOS ALAMOS SCIENTIFIC LABORATORY

FOUR LOS ALAMOS SCIENTISTS

Hans A. Bethe

George B. Kistiakowsky

Enrico Fermi

John von Neumann



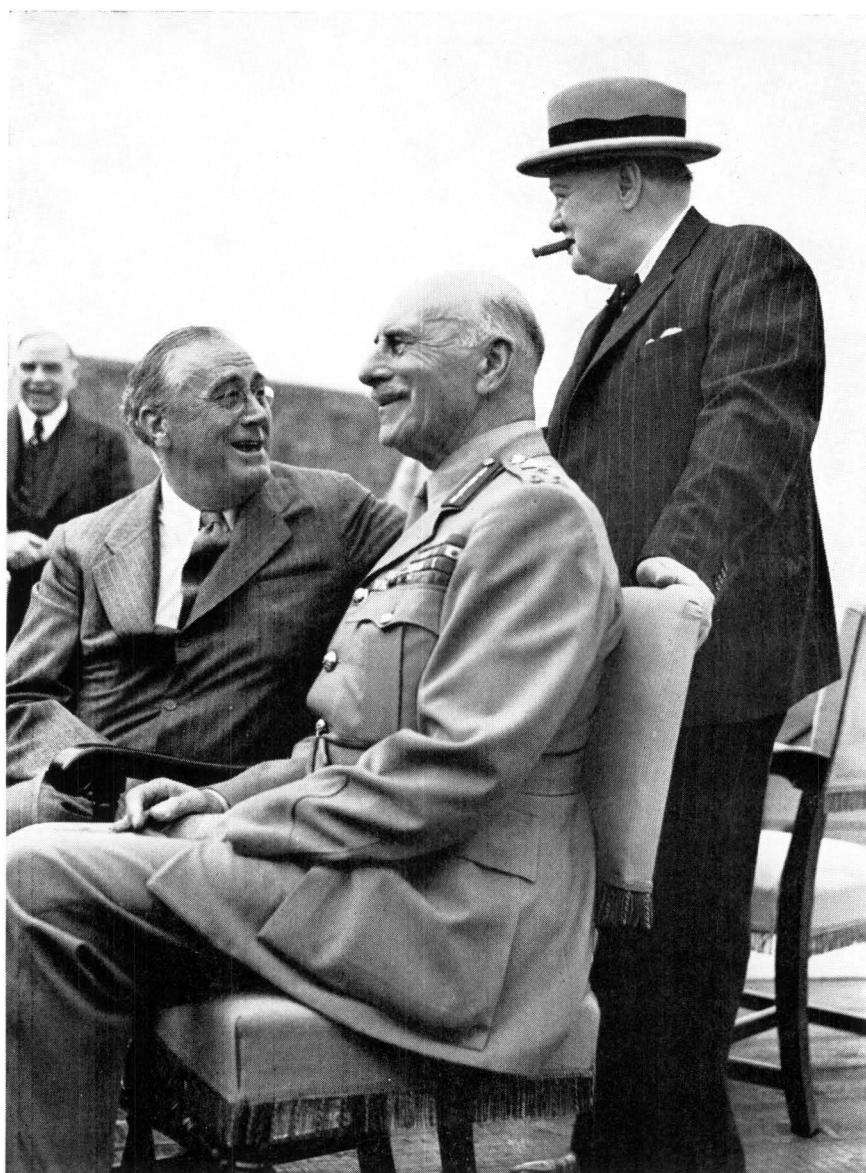
U. S. ARMY

RICHARD C. TOLMAN / Dean of the Graduate School, California Institute of Technology, and special adviser to General Groves.



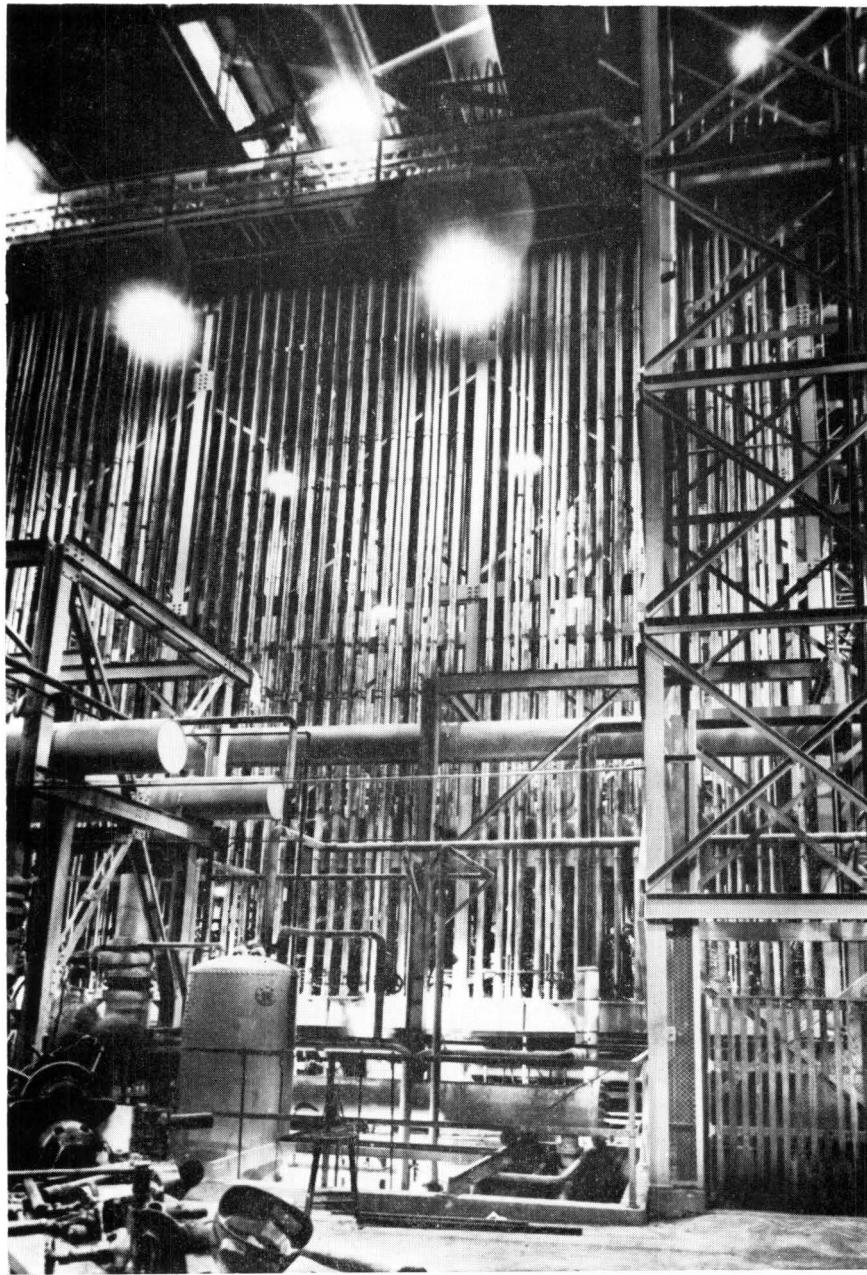
U. S. NAVY

CAPTAIN WILLIAM S. PARSONS / Naval officer who headed the Ordnance Division at Los Alamos.

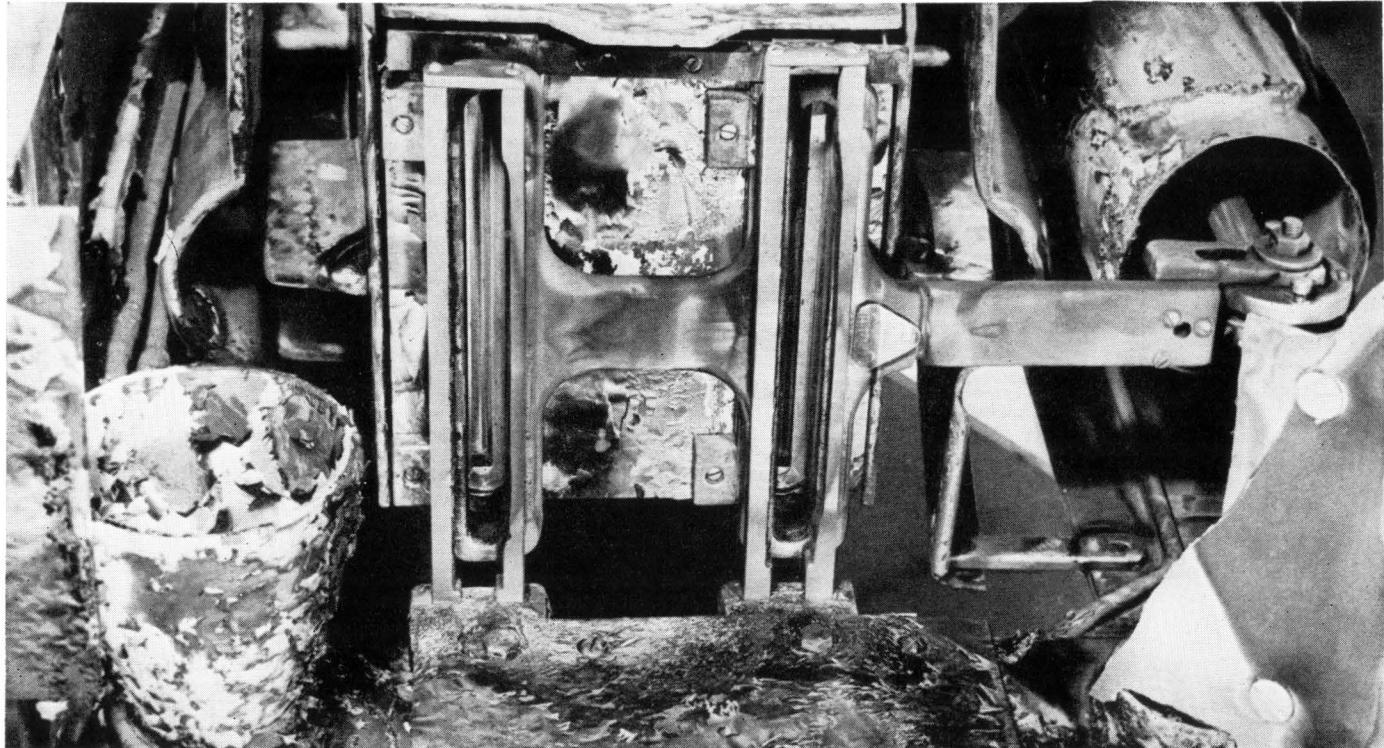


U. S. ARMY

ROOSEVELT AND CHURCHILL AT QUEBEC, 1943 / Photograph taken August 18, the day before the President and the Prime Minister signed the Quebec Agreement. Canadian Prime Minister Mackenzie King is in the background, while in the foreground is the Earl of Athlone, Governor-General of Canada.



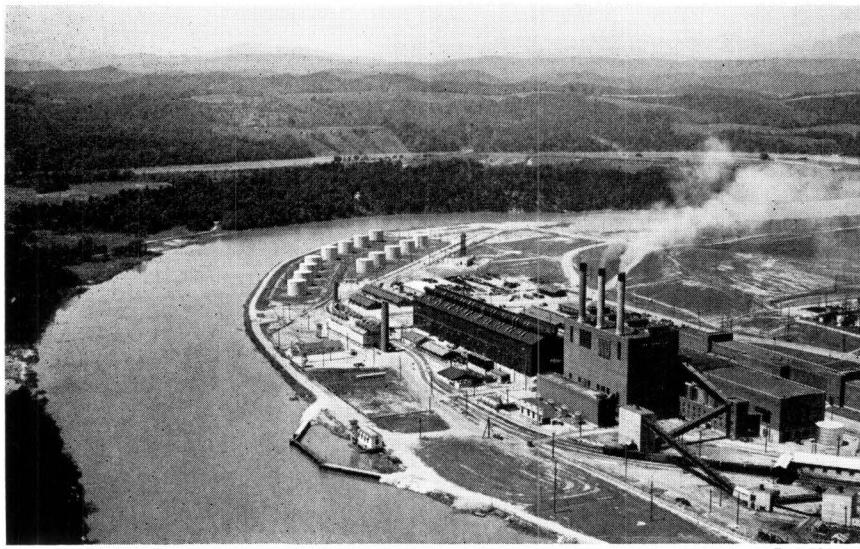
INTERIOR OF S-50, LIQUID-THERMAL-DIFFUSION PLANT / A few of the 2,142 identical 48-foot process columns that were housed in a building 522 feet long, 82 feet wide, and 75 feet high.



BETA SOURCE UNIT / During operation the two beams of ions were projected from the vertical slots. At the conclusion of a run it was necessary to wash off and recover the uranium-tetrachloride scale.



INSIDE THE U AT K-25 DURING CONSTRUCTION / The partially completed gaseous-diffusion plant presented a cluttered appearance in September, 1944.



J. E. WESTCOTT

K-25 POWERHOUSE AND S-50 / The power plant (rated capacity: 238,000 kilowatts) stands beside the Clinch River. Behind the power station is the S-50 complex: the main process building, the supplementary boiler plant, and the fuel-oil tank farm.

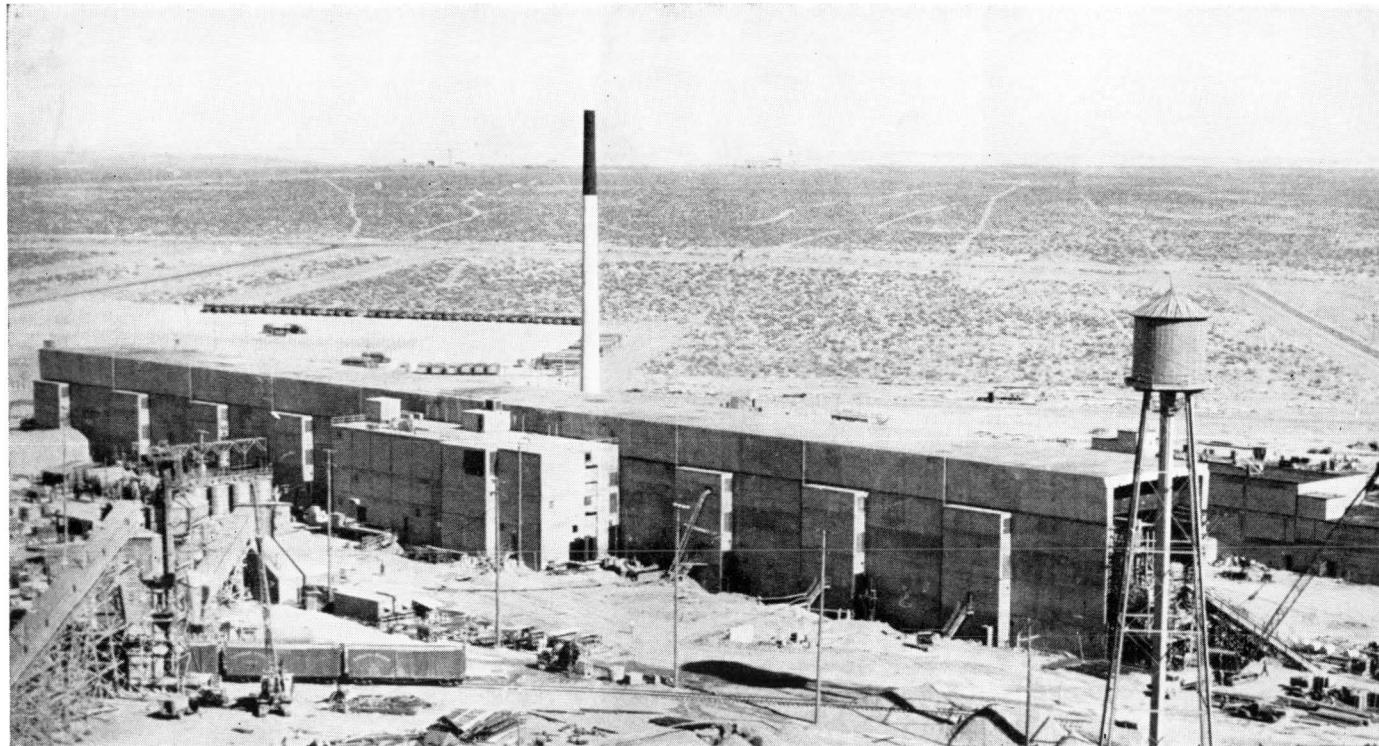


J. E. WESTCOTT

Y-12, THE COMPLETED ELECTROMAGNETIC PLANT / The town of Oak Ridge lies in the distance to the left.



K-25, THE COMPLETED GASEOUS-DIFFUSION PLANT / This four-story structure was almost one-half mile long and almost 2 million square feet in area.



CHEMICAL SEPARATION BUILDING 221-U / The second chemical separation plant nears completion, September, 1944.



D PILE COMPLETED / This plutonium-production facility at Hanford operated for the first time with a full loading on December 17, 1944.



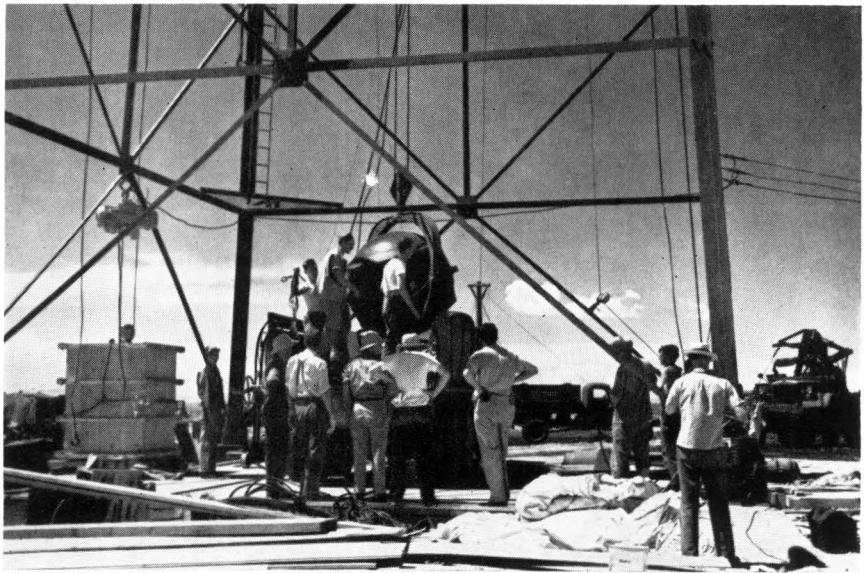
LAWRENCE RADIATION LABORATORY

CONFERENCE ON THE SMYTH REPORT / Henry D. Smyth (left) confers with Ernest O. Lawrence at Berkeley, autumn, 1944.



LOS ALAMOS SCIENTIFIC LABORATORY

ARRIVAL OF ACTIVE MATERIAL FOR JULY 16, 1945, TEST / Sergeant Herbert Lehr delivers the plutonium core to the assembly shack at the Trinity test site, about 6 p.m., July 12.



LOS ALAMOS SCIENTIFIC LABORATORY

UNLOADING THE SHELL OF THE TRINITY DEVICE / At the test site. When everything was assembled except the detonating system, the device was hoisted to the top of the tower.



U. S. ARMY

STIMSON ARRIVES IN BERLIN, JULY 15, 1945 / The Secretary of War at Gatow Airfield. Accompanying him is his aide, Colonel William H. Kyle.

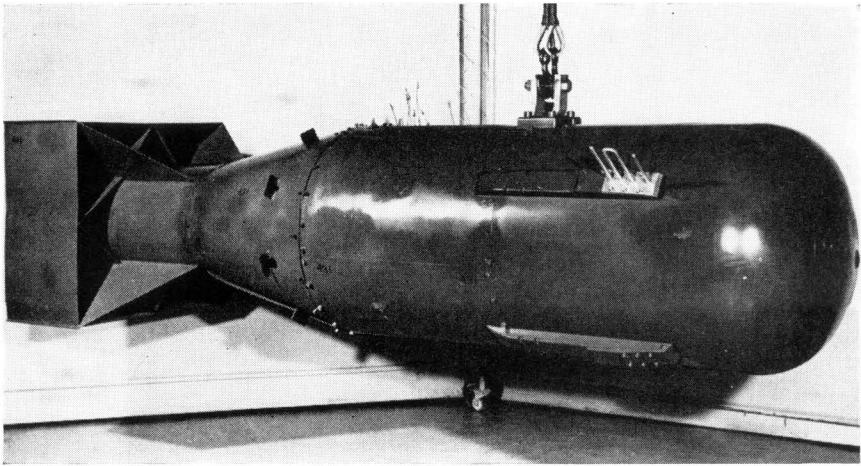


U. S. ARMY

AMERICAN LEADERS AT THE POTSDAM CONFERENCE / President Truman, Secretary of State James F. Byrnes, and Admiral William D. Leahy in front of Hitler's chancellory, July 16, 1945.

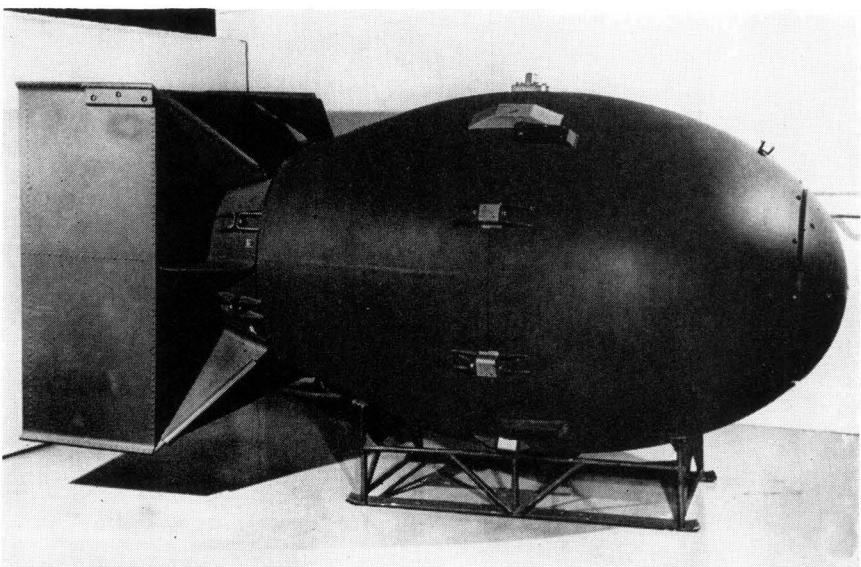


STALIN, TRUMAN, AND CHURCHILL CHAT INFORMALLY, JULY 17, 1945 / The first session of the Potsdam Conference was about to begin. Earlier the same afternoon, Stalin had assured Truman that his objectives in the Far East were less than the Yalta guarantees. Truman concluded that Stalin, concessions or not, was determined to enter the war against Japan.



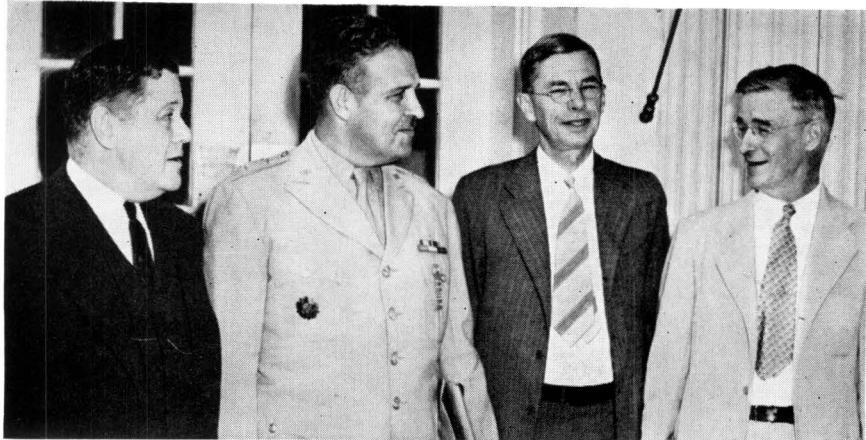
LOS ALAMOS SCIENTIFIC LABORATORY

"LITTLE BOY," THE URANIUM BOMB (GUN) / Nuclear weapon of the "Little Boy" type, the kind detonated over Hiroshima, Japan. The bomb is 28 inches in diameter and 120 inches long. The first nuclear weapon ever detonated, it weighed about 9,000 pounds and had a yield equivalent to approximately 20,000 tons of high explosive.



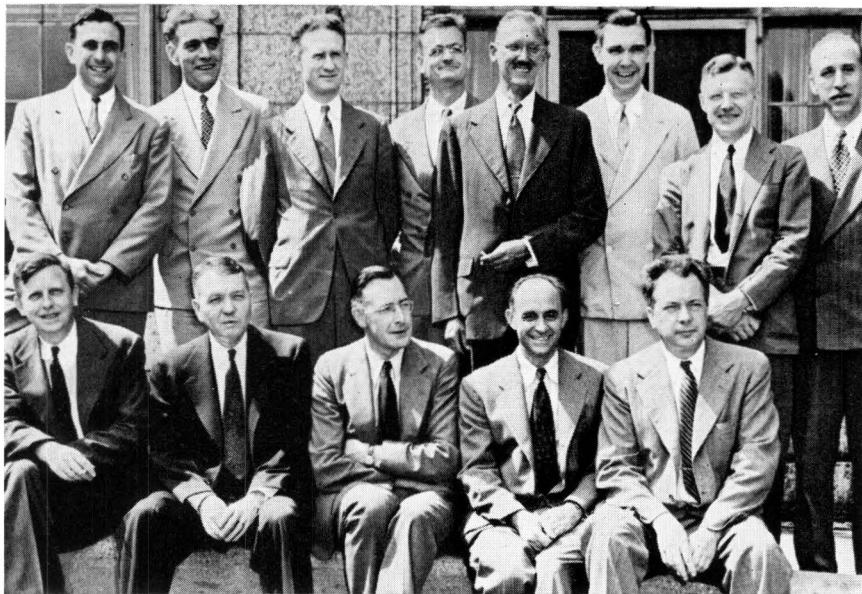
LOS ALAMOS SCIENTIFIC LABORATORY

"FAT MAN," THE PLUTONIUM BOMB (IMPLOSION) / Nuclear weapon of the "Fat Man" type, the kind detonated over Nagasaki, Japan. The bomb is 60 inches in diameter and 128 inches long. The second nuclear weapon to be detonated, it weighed about 10,000 pounds and had a yield equivalent to approximately 20,000 tons of high explosive.



UNITED PRESS INTERNATIONAL

POSTWAR PLANNERS / George L. Harrison, General Leslie R. Groves, James B. Conant, and Vannevar Bush leave the White House, August 9, 1945.



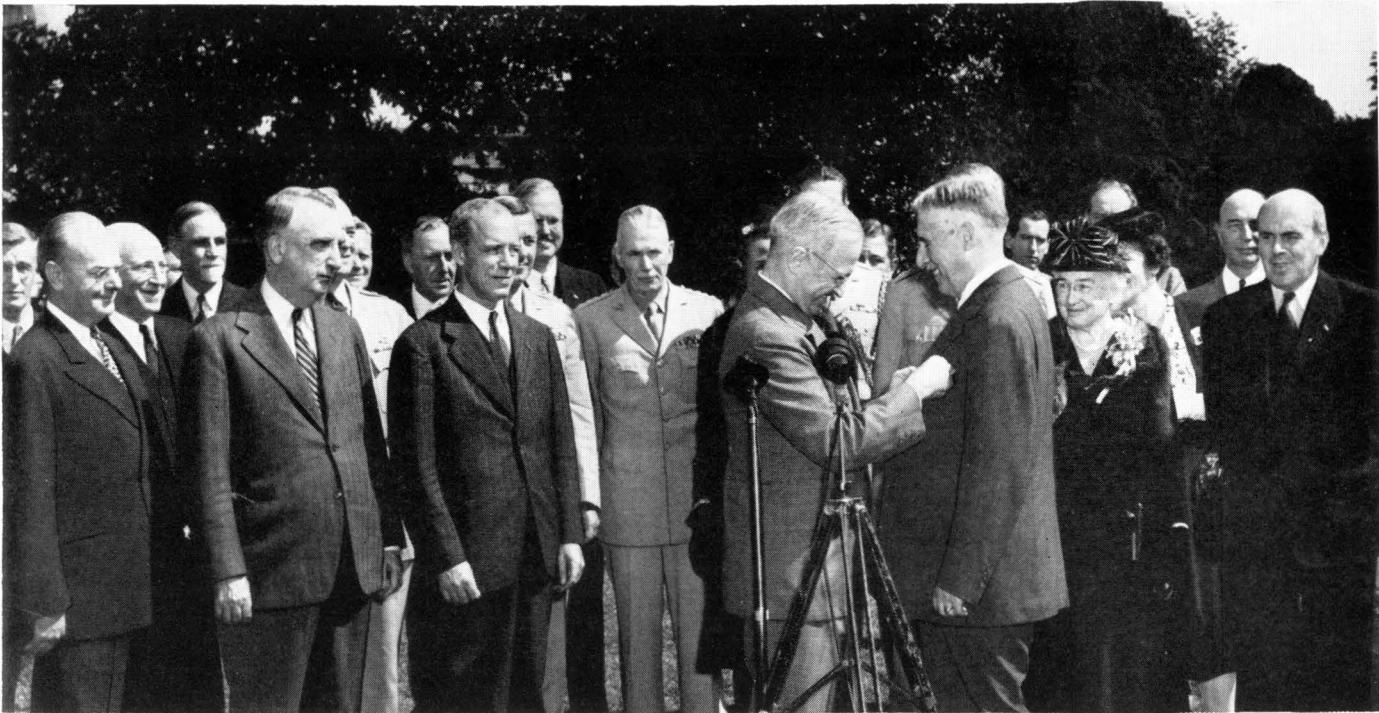
UNITED PRESS INTERNATIONAL

THE "BUTTERFLY WINGS" CONFERENCE, CHICAGO, SEPTEMBER, 1945 / At the opening of the University of Chicago's Institute of Nuclear Studies, Samuel K. Allison warned that Army security restrictions might force scientists to limit their studies to butterfly wings.

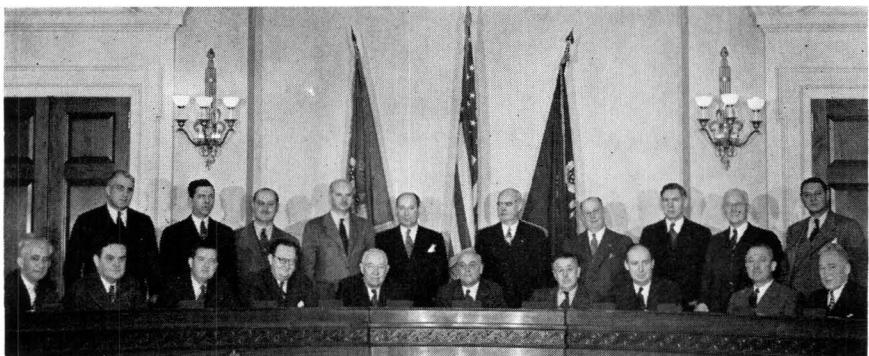
Left to right

seated: W. H. Zachariasen, H. C. Urey, C. S. Smith, E. Fermi, S. K. Allison.

standing: E. Teller, T. R. Hogness, W. H. Zinn, C. Zener, J. E. Mayer, P. W. Schutz, R. H. Crist, C. Eckhart.



PRESIDENT TRUMAN AWARDS STIMSON THE DISTINGUISHED SERVICE MEDAL, SEPTEMBER 21, 1945 / After this ceremony, many of those present attended a Cabinet conference to consider American nuclear policy toward Russia. Behind the President and Stimson, left to right: OWMR Director John W. Snyder, Secretary of the Treasury Fred M. Vinson, Secretary of War Robert P. Patterson, General Breton B. Somervell, Mrs. Stimson, Assistant Secretary of War John J. McCloy. Behind and to the left of Somervell is Stimson's friend and aide, Harvey H. Bundy.



MILITARY AFFAIRS COMMITTEE, U. S. HOUSE OF REPRESENTATIVES, 1945

Seated, left to right: Carl T. Durham, Paul J. Kilday, John J. Sparkman, Overton Brooks, R. Ewing Thomason, Andrew J. May, Walter G. Andrews, Dewey Short, Leslie C. Arends, Thomas E. Martin.

Standing, left to right: Philip J. Philbin, Arthur Winstead, Chet Holifield, Robert L. F. Sikes, Melvin Price, J. Parnell Thomas, Ivor D. Fenton, J. Leroy Johnson, Charles H. Elston, Forest A. Harness.



UNITED PRESS INTERNATIONAL

EDWARD U. CONDON EXPLAINS URANIUM MINERALS TO SENATORS McMAHON AND VANDENBERG, NOVEMBER 7, 1945 / Condon's appointment as scientific adviser to the Senate Special Committee on Atomic Energy had been announced just the day before.



UNITED PRESS INTERNATIONAL

ALEXANDER SACHS AND GENERAL GROVES / Chatting at a hearing before the Senate Special Committee on Atomic Energy, November 27, 1945.



UNITED PRESS INTERNATIONAL

THE AGREED DECLARATION OF WASHINGTON, NOVEMBER 15, 1945 / President Truman with Prime Ministers Attlee and King after Truman had finished reading their proposal for a United Nations commission on the control of atomic energy. Senators Vandenberg and Connally had left in a huff without waiting for photographs.

Standing, left to right: Vannevar Bush, T. L. Rowan (Attlee's secretary), Charles A. Eaton, Brien McMahon, Lester B. Pearson, James F. Byrnes, Sol Bloom, William D. Leahy.



UNITED PRESS INTERNATIONAL

PRESIDENT TRUMAN SIGNS THE BILL CREATING THE U. S. ATOMIC ENERGY COMMISSION, AUGUST 1, 1946 / Behind the President, left to right: Senators Tom Connally, Eugene D. Millikin, Edwin C. Johnson, Thomas C. Hart, Brien McMahon, Warren R. Austin, Richard B. Russell.



LILIENTHAL BOARD OF CONSULTANTS AT OAK RIDGE, FEBRUARY, 1946 /
Left to right: Harry A. Winne, David E. Lilienthal, Colonel Kenneth D. Nichols (not a
board member), Chester I. Barnard.



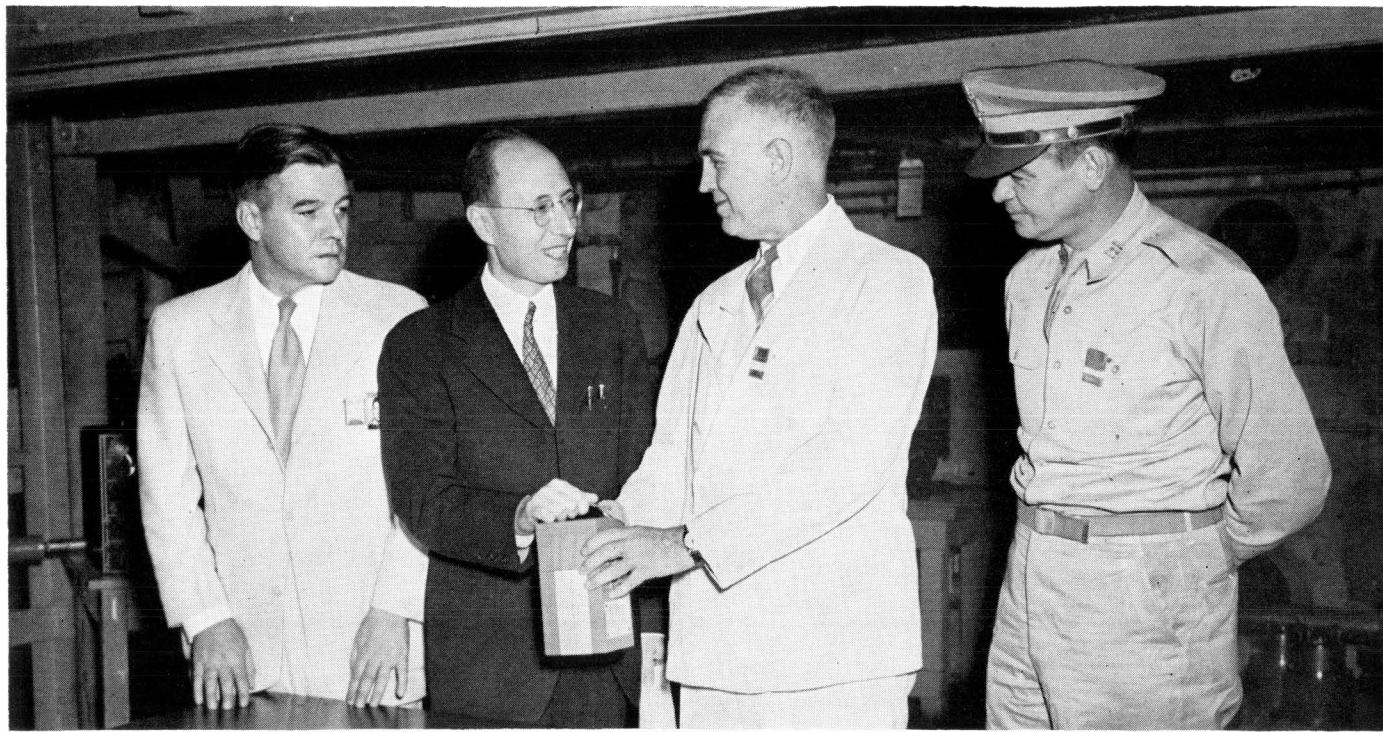
J. E. WESTCOTT

LILIENTHAL BOARD OF CONSULTANTS AT OAK RIDGE, FEBRUARY, 1946 /
Left to right: Robert Oppenheimer, Charles A. Thomas, staff members Herbert S. Marks
and Carroll L. Wilson.



UNITED PRESS INTERNATIONAL

BERNARD M. BARUCH PRESENTS THE AMERICAN PLAN FOR INTERNATIONAL CONTROL, JUNE 14, 1946 / Baruch proposed that the United Nations Atomic Energy Commission recommend the establishment of an international atomic development authority. Seated at Baruch's right is UN Secretary-General Trygve H. Lie.



U. S. ARMY

THE FIRST PEACETIME PRODUCT OF ATOMIC ENERGY / Clinton Laboratories Research Director Eugene P. Wigner delivers one milli-curie of carbon 14 to Dr. E. V. Cowdry, Barnard Free Skin and Cancer Hospital, St. Louis, Missouri, August 2, 1946.
Left to right: Prescott Sandidge, Clinton Laboratories; Wigner; Cowdry; Colonel Elmer E. Kirkpatrick, Deputy District Engineer.



HARRIS AND EWING

PRESIDENT TRUMAN TRANSFERS CONTROL TO THE ATOMIC ENERGY COMMISSION, DECEMBER 31, 1946 / The President is signing the executive order formally transferring control from the Army, effective 12:01, January 1, 1947. General Manager Carroll L. Wilson is on the President's right; Chairman David E. Lilienthal on his left. Standing, left to right: Commissioner Sumner T. Pike, Colonel Kenneth D. Nichols, Secretary of War Robert P. Patterson, General Leslie R. Groves, Commissioner Lewis L. Strauss, Commissioner William W. Waymack. The fifth Commissioner, Robert F. Bacher, was at Los Alamos.