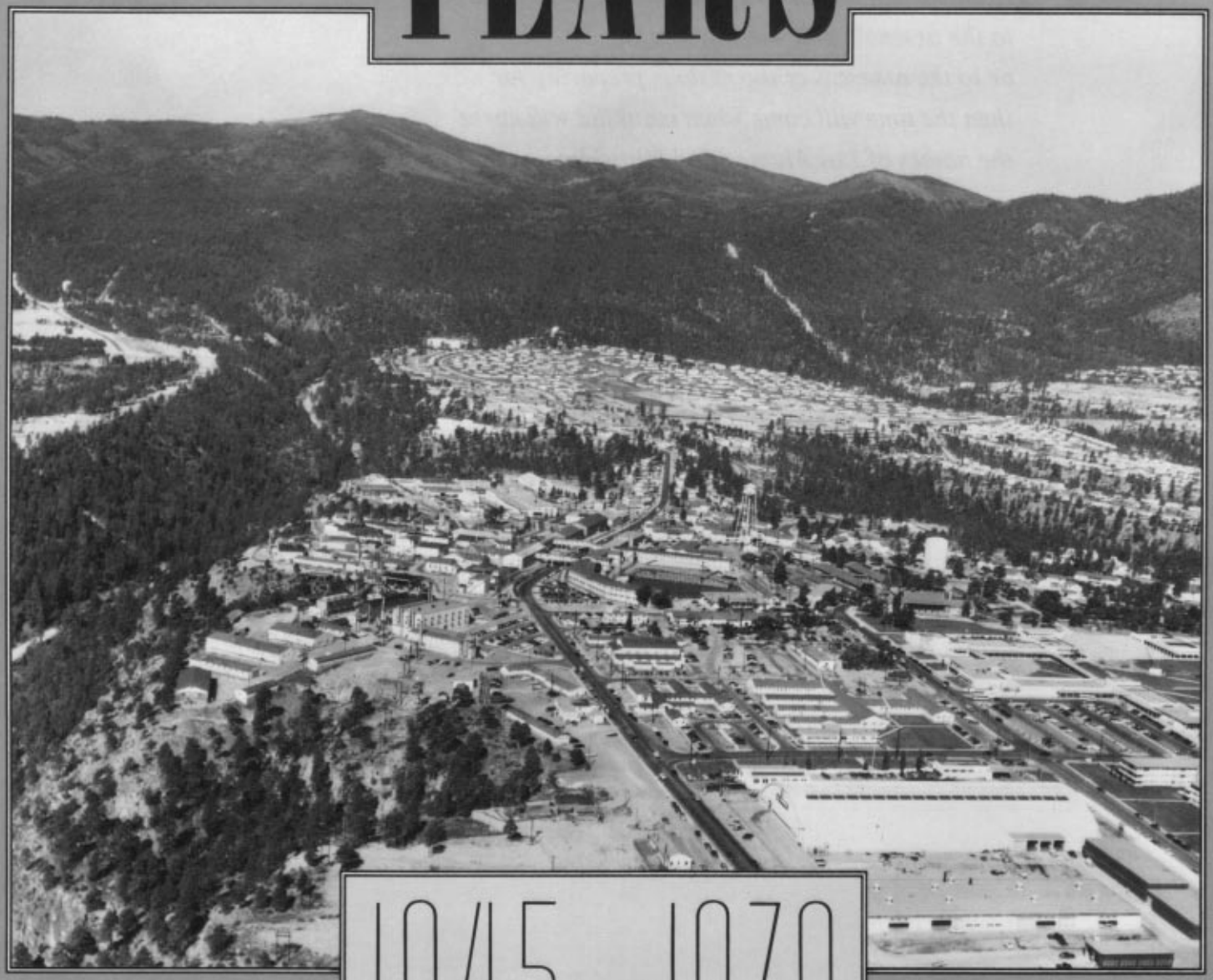
THE BRADBURY YEARS



1945—1970

In late 1945 a small group of courageous and loyal scientists and technicians undertook to continue the post-war operation of the Los Alamos Scientific Laboratory. These men believed that atomic weapons development had barely begun, that other countries would develop such weapons, and that the safety and security of the United States—if not of the world—depended upon the technical lead of this country. These men had the courage to stay at Los Alamos in the face of an uncertain future. . . .

These men did not make demands nor require promises. These men stayed and built the greatest weapons laboratory this country has ever known. These men stayed and developed the greatest array of powerful and flexible atomic weapons of any country in the world—developed them faster, developed them where they were urgently needed and requested by the Armed Forces—developed them to fit the productive resources of the newly established Atomic Energy Commission. They stayed and built a laboratory that developed every *successful thermonuclear weapon that exists today.* Others left, but these men stayed and worked, and many others came to join them.

What these men accomplished cannot be told in detail, for these facts are classified TOP SECRET. These men do not talk. They believe in deeds, not words. But these deeds earned for the Los Alamos Scientific Laboratory the only Presidential Citation ever awarded to any laboratory for its extraordinary success in the development of both fission and fusion weapons, and its contribution to the collective security of the Nation and the free world. What these men accomplished was this: They built a laboratory from 1200 employees in 1946 to 3000 employees in 1954. They brought back many of the senior wartime staff members as consultants, frequently for months at a time. They worked and thought and had ideas, In the fission weapons field, they advanced development from the few primitive wartime weapons to weapons enormously more powerful; to weapons enormously cheaper; to weapons so enormously more efficient that only a small fraction of the bomb load, and a small fraction of the number of planes, and a small fraction of the cost in fissionable material were required. They multiplied the atomic capability of this country in so many ways that not even billions of dollars spent in active material production would have been equivalent.

Nor was the Laboratory idle in the thermonuclear field. The wartime efforts of a small group of men in the Laboratory were summarized in the 1946 conference. Later in that year, the basic idea for one of the present patterns of thermonuclear weapons arose, although no way to exploit it effectively could then be seen. An elaborate program of basic research, both theoretical and experimental, was undertaken in order to provide both the necessary fundamental data for the basic calculations as to whether the "super" bomb would work at all, even if it could be ignited.

Thermonuclear work never stopped. Basic nuclear data was obtained, TOP SECRET theoretical studies on thermonuclear processes were carried out, the great electronic brain, the Maniac, was being built with such calculations in mind, and simultaneously the necessary practical studies of materials and potential engineering problems were conducted. All this is in the official record of the Laboratory's work during the period from 1946 to 1951. Thermonuclear work grew as the Laboratory grew. By 1949 the design and understanding of fission bombs had proceeded far enough to permit studies of their application to thermonuclear systems to be undertaken. Even before the Russian Bomb was fired, the Laboratory was working on the detailed design of an experiment employing thermonuclear principles which would answer some (but far from all) of the basic questions regarding thermonuclear systems. Still later events suggested the addition to the Greenhouse program of even a more elaborate experimental approach. In March 1950 the Laboratory went, on its own volition, on a 6 day week for almost 3 years to speed its developments while it was further expanding its scientific staff.

Had the Laboratory attempted to exploit the thermonuclear field to the exclusion of the fission field in 1946, what would have happened? Hypothetical history can only be an educated guess, but the guess in this case is almost certain. The fission weapons stockpile would have been but a fraction of its present size. The essential fission techniques required for practical thermonuclear weapons would not have been developed. Discouragement would have nagged at those who worked in a field without the means for practical accomplishment, and the program—and the Laboratory—might have died.

Rather than delaying the actual accomplishment of thermonuclear weapons, the Los Alamos Scientific Laboratory has, by its insistence on doing necessary things first, demonstrably provided the fertile soil in which the first feasible ideas could rapidly grow, and demonstrably did develop such weapons, and probably, but not demonstrably, did so years ahead of any other course which could have been pursued with the facilities and people available. Technically, the development of fusion weapons is so inextricably allied with and dependent on the development of fission weapons, that great success in the former had to follow success in the latter. . . .

At every stage from 1946 to the present time, the fission and fusion programs—both in basic research and in practical application—were pursued with the maximum appropriate emphasis, with care, with precision, and with success. What "might have been" is idle speculation. What would have happened to World War II if the Manhattan District had started work in 1939?

The imputation of disloyalty to that now large group of scientists and technicians who are fundamentally responsible for every nuclear weapon, fission and fusion, that the United States has in its stockpile, who are responsible for the atomic weapons leadership that this country presently enjoys, and who are dedicated to the continuance of this leadership, is a tragic, if not malevolent, thing. The motives behind these accusations of Los Alamos are unclear; their bases are faulty and irresponsible information necessarily obtained from those who do not and cannot know the classified facts; and their effect on the Laboratory would be wholly disheartening were it not for our knowledge that the facts warrant the full confidence of the Nation in our accomplishments over many years.

Norris Bradbury, September 24, 1954

Press statement made to Santa Fe's The New Mexican *in response to advance press on* The Hydrogen Bomb: The Men, The Menace, The Mechanism, *a book by Shepley and Blair.*