

Oak Ridge—The Nation's Atomic Center

A statement made by Dr. C. E. Brehm, President of The University of Tennessee, before the Board of Directors of this Bank's Nashville Branch.

UNTIL September 19, 1942, Oak Ridge, Tennessee, lying some twenty-five miles from Knoxville, was a quiet, more or less isolated area consisting of 58 thousand acres of valleys, woodlands, and undeveloped farm land inhabited by approximately a thousand families. Because of its isolation and the protection which its hills and valleys would provide for the projects to be located there, this area was selected with great secrecy by the Manhattan District of the Corps of Engineers, United States Army, for this country's phases of atomic energy production.

The first plans called for a community of 12,000 persons but, as the plant expanded, the population grew. At the peak of operations in August, 1945, when the first atomic bomb was dropped over Japan, Oak Ridge had a population of 75,000. Today the population is fairly stable at about 35,000.

The Oak Ridge area is divided into two parts. One part is the city which houses the personnel who work on the atomic energy projects, and the other is the site on which are located the various atomic projects, several miles away from the city.

Construction was begun on the city of Oak Ridge early in 1943 and proceeded with phenomenal speed. When completed, the city cost 96 million dollars and covered approximately ten square miles. Oak Ridge is a complete city in every respect. The city's 9,600 housing units are arranged in residential neighborhoods on the wooded hillsides. The population is served by nine shopping centers. Education for the children of the personnel is provided by ten elementary schools, a junior high school, and a high school. The social life of the community finds expression in a hundred organizations of one kind or another and in twenty-six church groups.

Ever since January 1, 1947, Oak Ridge has been under the jurisdiction of the Atomic Energy Commission and continues to be, as it was from the beginning, a government-owned and government-operated city. There are no elected officials. The possibility of incorporation, however, is being studied.

Until March 19, 1949, the city was closed and the inhabitants lived behind a fence. Entrance could be had only by pass, and this was very carefully scrutinized. On March 19, however, the city was formally opened to the public. A master plan is now being worked out for its future development and new business establishments will be erected under long-term leases.

For security reasons, the various atomic projects are located in secluded valleys some miles from the city of Oak Ridge. They remain closed to the public. The chief atomic project at Oak Ridge is the production of Uranium-235. Oak Ridge is the world center for the production of this material. It is also the source of virtually all the world's radioactive isotopes that are now widely used in research, in medicine, in agriculture, in engineering, and in industry. Oak Ridge is thus the capital of the world's peacetime atomic energy research and development.

The following are some major installations at Oak Ridge:

1. *Gaseous Diffusion Plant for the Production of Uranium.* This plant, covering 44 acres and extending for almost half a mile, is the largest industrial building of its kind in the world. Nearby is a second process building, one-fourth as large as the main structure. The entire cost of the

present plant was 500 million dollars but within the next two years an addition will be constructed at a cost of 70 million dollars.

In the vicinity of the gaseous diffusion plant is located the largest steam generating plant ever to be built in one operation. This plant has a generating capacity of 238 thousand k.w. and cost 34 million dollars to build.

2. *Electro-magnetic Separation Plant.* This plant covers 500 acres, and in January, 1944, was the scene of the first mass production of Uranium-235 in history. The uranium for one of the first two bombs was separated here. This plant also produces stable isotopes that are widely used in research and conducts studies looking to the improvement of production methods.

3. *Oak Ridge National Laboratory.* Built at a cost of 12 million dollars, this laboratory was used during the war as a pilot plant for the huge plutonium plant at the Hanford Works in the state of Washington. The laboratory's chain reactor is the world's chief source of radioactive isotopes. At present, research programs are under way in chemistry, biology, health physics, metallurgy and allied fields.

4. *Institute of Nuclear Studies.* This institute is an educational enterprise sponsored by nineteen universities and educational institutions in the South. Through it the Oak Ridge facilities are made available for graduate research, particularly in the field of nuclear energy; special training courses are conducted in the handling of radioactive isotopes; and methods of educating the public throughout the South in the field of atomic energy are developed.

Because of its nearness to Oak Ridge, the University of Tennessee is in a particularly favorable position to take advantage of the facilities for research that are there provided. The University has approximately 225 graduate students and four teachers in the area.

The Tennessee legislature now has under consideration an appropriation to the University amounting to three million dollars for the establishment of a research center and hospital. The purpose of this research center and hospital is to collaborate with the Oak Ridge scientists and utilize the facilities that are there available for research in medicine, agriculture, engineering, and industry. It has already been found that certain radioactive isotopes are beneficial in the treatment of cancer and some other diseases that have heretofore been considered incurable. Further research may lead to a cure for cancer.

The University of Tennessee is also conducting a comprehensive farm research program on a three-thousand-acre tract. One phase of this project is a study of the breeding records of cattle accidentally exposed to the effects of radiation following the test explosion of the first atomic bomb at Alamogordo, New Mexico, on July 16, 1945. The purpose of this study is not only to study the effect of radiation on the cattle immediately involved but also to study the possible effects on succeeding generations descended from these cattle.

The development of atomic energy promises to make mankind's future something quite different than was ever dreamed of before. We are proud that Tennessee has been the scene of some of the work done in this epoch-making endeavor.