The Harshaw Chemical Company produced a number of major and minor uranium products for the Manhattan Project during World War II. Five thousand metric tons of uranium were processed under Atomic Energy Commission/Manhattan Engineer District contracts between 1942 and 1954. Chemical operations were carried out within the Building G-1 complex, also known as Plant C or the "Harvard-Denison Plant," which was built and added to several times over the period 1944-1953.

Several major processing operations were conducted in Building G-1. In general, the refinery received triuranium octaoxide (yellowcake or black oxide) and produced uranium trioxide (orange oxide), uranium dioxide (brown oxide), uranium tetrafluoride (green salt) and uranium hexafluoride, the feed material for enrichment. The uranium hexafluoride was then transported to Oak Ridge, Tennessee, for enrichment (an increase in the mass percent of uranium -235).