The Japanese aerial attack on Hanford Engineer Works

CHARLES W. CLARK, Joint Quantum Institute — The day before the Pearl Harbor attack, December 6, 1941, the University of Chicago Metallurgical Laboratory was given four goals: design a plutonium (Pu) bomb; produce Pu by irradiation of uranium (U); extract Pu from the irradiated U; complete this in time to be militarily significant.¹

A year later the first controlled nuclear chain reaction was attained in Chicago Pile 1 (CP-1). In January 1943, Hanford, WA was chosen as the site of the Pu factory.²

Neutron irradiation of \(^{238}\text{U}\) was to be used to make \(^{239}\text{Pu}\). This was done by a larger version of CP-1, Hanford Reactor B, which went critical in September 1944. By July 1945 it had made enough Pu for two bombs: one used at the Trinity test in July; the other at Nagasaki, Japan in August. I focus on an ironic sidelight to this story: disruption of hydroelectric power to Reactor B by a Japanese fire balloon attack on March 10, 1945. This activated the costly coal-fired emergency backup plant to keep the reactor coolant water flowing, thwarting disaster and vindicating the conservative design of Hanford Engineer Works.


Charles W. Clark
Joint Quantum Institute

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