

development of the chain reacting units, or piles, utilizing the neutron induced fission reaction on U^{235} in natural uranium, in which the extra neutrons beyond those needed to perpetuate the chain reaction are absorbed by U^{238} to form the desired isotope Pu^{239} . These well-known reactions are summarized in the following slide (Figure 2).

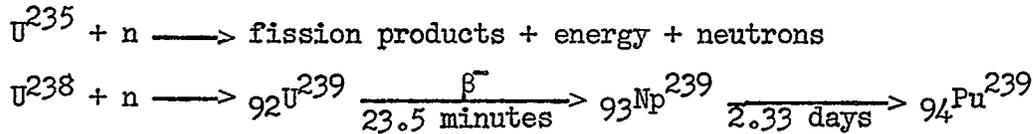


Figure 2

The isolation of the plutonium was to be done by chemical means, and in the spring of 1942, I and a number of my colleagues moved to the Metallurgical Laboratory at the University of Chicago to work on this problem. Among the people who made outstanding contributions to this separation program, both at Chicago and at other sites, was Dr. I. Perlman, who, it is interesting to note, before this time had made an outstanding reputation in another field, the application of radioactive tracers to physiology and biochemistry. Investigations continued at the University of California under the direction of W. M. Latimer and A. C. Wahl, leading to further discoveries of importance to the program.

During the first months at the Metallurgical Laboratory intensive effort was directed toward defining the process which was to be used in the production plants which were then being planned. Although it was felt that the separation process would depend on the use of the two oxidation states of plutonium which had been discovered during the early work at the University of California, the actual details, such as the