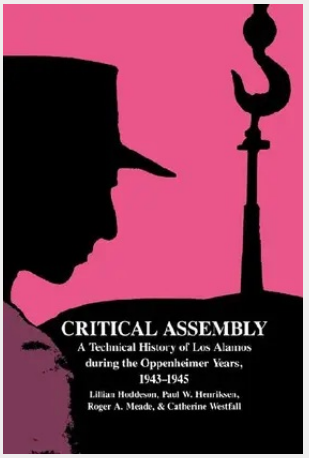
Hoddeson / Henriksen / Meade

Critical Assembly

A Technical History of Los Alamos During the Oppenheimer Years, 1943 1945



This volume is a lucid and accurate history of the technical research that led to the first atomic bombs. The authors explore how the 'critical assembly' of scientists, engineers and military personnel at Los Alamos, responding to wartime deadlines, collaborated to create a new approach to large-scale research. The book opens with an introduction laying out major themes. After a synopsis of the prehistory of the bomb project, from the discovery of nuclear fission to the start of the Manhattan Engineer District, and an overview of the early materials programme, the book examines the establishment of the Los Alamos Laboratory, the implosion and gun assembly programmes, nuclear physics research, chemistry and metallurgy, explosives, uranium and plutonium development, confirmation of spontaneous fission in pile-produced plutonium, the thermonuclear bomb, critical assemblies, the Trinity test, and delivery of the combat weapons. Readers interested in history of science will find this volume a crucial resource for understanding the underpinnings of contemporary science and technology. It is the third book in a trilogy consisting of The Birth of Particle Physics (1986) and Pions to Quarks (1989).

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