

= Franklin Matthias =

Franklin Thompson Matthias (13 March 1908 ? 3 December 1993) was an American civil engineer who directed construction of the Hanford nuclear site , a key facility of the Manhattan Project during World War II .

A graduate of the University of Wisconsin ? Madison , Matthias joined the Tennessee Valley Authority (TVA) as a Junior Hydraulic Engineer in 1935 , and worked on hydroelectric projects . In April 1941 , he was called to active duty by the United States Army , and joined the Construction Division of the Army Corps of Engineers . He was area engineer at the Manhattan Project 's Hanford site from 1942 to 1945 . As such , he supervised the enormous construction effort which included three chemical separation plants so large that they were known as " Queen Marys " , and the world 's first three production @-@ scale nuclear reactors .

After the war Matthias went to Brazil where he helped build a hydroelectric facility . He joined the Aluminum Company of Canada (Alcan) in 1951 , and was involved in the construction of its Kemano @-@ Kitimat hydroelectric dam and aluminum smelter project in northern British Columbia and the Chute @-@ des @-@ Passes project in Quebec . He was a vice president at Kaiser Engineering from 1960 to 1973 .

= = Early life = =

Franklin Thompson Matthias was born in Glidden , Wisconsin , on 13 March 1908 , the son of Franklin Herman Matthias and Christina Thompson . He had two older brothers , Harold and Norman , and a younger brother , Carl . In 1928 he became an instructor in Topographical and Hydraulic Engineering at the University of Wisconsin ? Madison , from which he received his Bachelor of Science (B.S.) degree in civil engineering in 1931 , and his Master of Science (M.S.) degree in civil engineering in 1933 . While there he joined the Reserve Officers ' Training Corps (ROTC) . In 1930 and 1931 he was editor of the Wisconsin Engineer , and president of the university YMCA . He was a member of Tau Beta Pi , Phi Kappa Phi and Scabbard and Blade , and was a national officer of Chi Epsilon from 1931 to 1942 .

On 1 August 1933 , Matthias married Reva Baumgarten , a fellow graduate of the University of Wisconsin , who taught speech therapy in schools in Beloit , Wisconsin . In 1935 he was hired by the Tennessee Valley Authority (TVA) as a Junior Hydraulic Engineer , and worked on hydroelectric and hydraulic problems and on construction , planning and plant design . He left the TVA in 1939 , and spent a year working with a contractor on dredging the Tennessee River . In 1940 and 1941 he worked for the A. L. Johnson Construction Company , and on tunnels and aqueducts for the Dravo Corporation .

= = World War II = =

In April 1941 , Matthias was called to active duty by the United States Army as a first lieutenant , and joined the Construction Division of the Army Corps of Engineers , where he received rapid promotion . On 14 December 1942 , as a 34 @-@ year @-@ old lieutenant colonel , he accompanied Colonel Kenneth Nichols to Wilmington , Delaware , to discuss the location of a proposed plutonium production plant with representatives of DuPont . At this point , Matthias had not yet been assigned to the Manhattan Project , whose mission was to build an atomic bomb , but he had worked on some special studies for it , and had worked with its director , Brigadier General Leslie R. Groves , Jr . , on the construction of The Pentagon . He was already Groves 's choice for area engineer for the plutonium project .

Initially , the intention had been to locate the plutonium plant with the Manhattan Project 's other production facilities at the Clinton Engineer Works in Oak Ridge , Tennessee , but concerns had arisen about the dangers of an atomic explosion , and Knoxville lay only 20 miles (32 km) away . A larger site was required where facilities could be separated from each other . It had to be in a sparsely populated but accessible area with access to abundant water and electric power . When he

returned from the meeting , Matthias was met by Groves , who instructed him to take a survey team and find a suitable site . Matthias surveyed four sites in California and Washington , and chose the area around Richland , Washington .

Matthias later recalled that :

As far as my working relationship with Du Pont was concerned , of course , we had differences from day one . I was fortunate that Gil Church and Walt Simon (Du Pont 's project construction manager and operations manager) were people I could deal with and respect , and we had a very good working relationship . I remember one time Granville Read (Du Pont 's assistant chief engineer) called up Groves and said Matthias and Church were having a big argument about something and what should we do ? Groves replied , " Well , if those two guys don 't have some arguments , then neither of them are worth a damn . "

Because of the isolation of the site , known as the Hanford Engineer Works , Matthias exercised more administrative autonomy than the Manhattan Project 's other area engineers . The number of personnel assigned to his office grew to over 500 in 1944 . Construction work commenced on the 400 @, @ 000 @-@ acre (160 @, @ 000 ha) site in April 1943 . The size of the construction work force eventually reached 44 @, @ 900 in June 1944 ; over 150 @, @ 000 workers were employed at the site between 1943 and 1946 .

The scale of the task was enormous . Matthias supervised the construction of 554 buildings , 386 miles (621 km) of roads , 158 miles (254 km) miles of railroad track , three chemical separation plants and the world 's first three production @-@ scale nuclear reactors . The 800 @-@ foot (240 m) -long chemical separation plants , where the plutonium was separated from uranium slugs that had been irradiated in the reactors , were so large that they were known as " Queen Marys " , after the ocean liner . Because the slugs were dangerously radioactive , the Queen Marys had concrete walls 7 feet (2 @. @ 1 m) thick , and operations were by remote control .

The first production batch of uranium slugs were dissolved at the separation plant on 26 December 1944 , and in January 1945 Matthias personally couriered the first batch of plutonium nitrate to Los Angeles , where he handed it over to another courier , who took it to the Los Alamos Laboratory . Plutonium from Hanford would be used in the Fat Man bomb used in the bombing of Nagasaki . For his wartime services , he was awarded the Distinguished Service Medal .

= = Later life = =

Matthias left the Army in 1946 and went to Brazil as a project manager for the construction for a hydroelectric facility , eventually becoming the Manager of Engineering at Brazilian Traction . Late in 1951 he joined the Aluminum Company of Canada (Alcoa) as the Project Manager of Engineering and Construction of the Kemano @-@ Kitimat hydroelectric dam and aluminum smelter project in northern British Columbia . In 1956 he moved to Montreal as its Director of Engineering , and worked on the Chute @-@ des @-@ Passes project . In 1960 he joined Kaiser Engineering in Oakland , California , as its Vice President for Heavy construction and Hydroelectric engineering , and was its Vice President of Transportation Projects from 1970 to 1973 . He retired in 1973 , at the age of 65 .

Matthias was a Registered Professional Engineer in Wisconsin , California , Nebraska , Pennsylvania , and British Columbia . For some years after his retirement he remained active as a consultant , working for firms including Kaiser Engineering , Pacific Gas and Electric , Louisiana Pacific and Bechtel . He was a member of the Advisory Board of the California Water Resources Association , the Committee on Large Dams , Committee on Construction of Nuclear Facilities , and the American Society of Civil Engineers . He also wrote the chapter on " Construction Services " in the Handbook of Heavy Construction (1971) .

In 1993 , he was informed that he had cancer of the lungs , liver and pancreas . He died six week later , on 3 December 1993 , at a nursing home in Walnut Creek , California . He was survived by his son Michael and younger brother Carl . His second wife , Mary Teresa Benderska , whom he had married on 29 October 1948 , had died in 1986 , and his daughter Gelen Christine had died in 1965 . His papers are in the Hagley Museum and Library in Wilmington , Delaware .

