

"It Was Awesome."

Chet Fankhauser

Fankhauser describes witnessing his first atmospheric test, part of Operation Castle, from a ship off Bikini Island in 1954.

For the Operation Castle shot in 1954, everybody got up in the dark. The crew was instructed to be sure that everybody wore goggles. It was the first shot I had ever had a chance to see. It was awesome. The ship was stationary, or at least it felt that way to me. I was up on the deck; Harold Brown (Laboratory Director, 1960–61) was there, Stirling Colgate was there, and I have forgotten who from Los Alamos. We were standing there, just waiting. You heard the countdown. All at once, the entire sky just lit up, and you kept seeing this huge bubble, and it kept getting brighter and brighter and bigger and bigger. I remember Harold making some comment like, "God, that looks different from what we thought it was going to be."

The shock wave hit us, and we really felt that. It was a physical effect. By that time, I had taken my goggles off, and the sky was still so brilliant that all I saw was this enormous fireball getting bigger and bigger. That finally began to cool, and you could see the fireball begin to rise. I think it was about that time that everybody began to realize that there was something different about this than what had been expected.



Above: A nighttime shot.
Below: The beach at Bikini Island.



Testing in the Pacific

For many early employees, a highlight of working at the Lab was being able to see their projects tested during the atmospheric tests in the Pacific. Between 1954 and 1962, Livermore participated in four U.S. atmospheric nuclear test operations at the Pacific Proving Grounds, which consisted of the Bikini and Enewetak Atolls in the Marshall Islands 2,100 miles southwest of Hawaii, and the Johnston Atoll and Christmas Island, located around 1,000 miles south of Hawaii.

On April 6, 1954, on the Bikini Atoll, the Laboratory detonated Koon, the third in the seven-test series under Operation Castle, and the first test of a Livermore H-bomb (thermonuclear) design. The test was disappointing and persuaded designers and testers to cancel the next Livermore test, Echo.

In 1956, a second series of tests (seven of them by Livermore) was launched under Operation Redwing on both Bikini and Enewetak Atolls. In 1958, Livermore conducted 15 more tests in the Marshall Islands area under Operation Hardtack I. Atmospheric nuclear testing then ceased for three years after a test moratorium was agreed upon by the three superpowers—the U.S., Soviet Union, and Great Britain.

While on location, the work days started early and didn't end until the work was done. Sometimes testing was delayed for weeks due to weather, even to the point where employees were sent home, and then were returned a few weeks later.

But there were worse places to be. While waiting for testing conditions to improve, employees spent the days swimming, snorkeling, competing in fishing derbies, and catching their fair share of lobsters and giant clams.

And then there were the meals. Dinners were scrumptious spreads; steak was a regular entree. "You always picked up your half-gallon of ice cream after dinner to take to the movies every night," says Blake Myers. Nights were spent around bonfires, playing ping pong and swapping stories.

Testing stopped after the moratorium, but after the Soviet Union announced on August 20, 1961, that they would break the moratorium and resume testing, the U.S. started planning Operation Dominic, the largest U.S. nuclear-testing operation ever conducted. Livermore participated in the 1962 test series, which included rocket-launched high-altitude tests in the Johnston Atoll area and air drops in the Christmas Island area. Dominic was the last atmospheric test series conducted by the U.S.

Hurry up and wait

Gordon Repp

Test shots turned into a waiting game because of weather conditions. When the weather suddenly changed on the eve of August 18, 1957, it was a frantic scramble to find employees “on shore leave” in Las Vegas.

We had many weather delays during Operation Plumbob in 1957, so the test series ran on and on. One of the shots, Shasta, had been delayed for weeks. Most shots were fired at dawn for diagnostic reasons, so pre-arming activities would take place about midnight and arm around 4 a.m. I was involved in pre-arm. Afterward, I would return to the Control Point to try and sleep until the countdown was started.

One day, the weather was really bad. The test director decided to cancel the shot early, so people could get a good night’s sleep. Wally Decker put on a suit and went to Las Vegas along with a consortium of other employees. But at 10 p.m., the weather suddenly changed. The shot was on again. A frantic effort was started to get people back to the site. Announcements were made in the casinos; locks were even cut off of diagnostic bunkers because the necessary people could not be found and had to be substituted. Wally arrived at the tower just in time for pre-arm. This was probably the only time pre-arm was conducted while someone was dressed in a suit. The shot was fired that night.



Above: balloon used to carry the device for an atmospheric test in Operation Plumbob.



Right: Gordon Repp (left) confers with a colleague.

Physics 101

Bill Wattenburg

my one and only security briefing was a simple but unforgettable admonishment by the stern gentleman who gave me my Q-clearance badge.

“What you see here, what you hear here, stays here. No exceptions for even friends and family. Got it? Violate that rule, and you lose this badge forever—and probably go to jail. And remember, the pleasant

stranger who tries to get you to brag about your work here may be one of my investigators.”

As I bobbed my head in fearful acknowledgment, he asked me, “Now what do you say to your wife when she asks you what you are working on here at the Lab?”

“I am just learning a lot of physics.” I hoped that would fly.

He studied me a moment and then commented, “You bet you will.”