

## **PROJECT FAULTLESS Moores Station, Nevada**

**Map 9-18**

**Photograph 9-15**

THE LIMITED TEST BAN TREATY in 1963 forced the AEC to go underground and changed nuclear explosions from atmospheric spectacles to seismic events. Through the 1960s, the AEC continued its tests at the NTS with devices of greater and greater yields. In late December 1966, the 870-kiloton Greeley detonation shook multi-story buildings in Las Vegas and alarmed its citizens, who naturally wondered whether their buildings would stand up to the increased shaking and rolling expected from even larger future tests. Recognizing this risk, the government searched for a new underground test site farther from Las Vegas that could contain megaton-range nuclear detonations without shaking other nearby towns to pieces. The AEC found a likely candidate in the desert 65 miles northeast of the Town of Tonopah. Now, the Central Nevada Supplemental Test Area is nestled against the eastern edge of the Hot Creek Range several miles south of the abandoned Moores Station ranch.

In 1967, the drilling contractor for the Lawrence Radiation Laboratory advanced the Project Faultless emplacement shaft into volcanic tuffaceous sediments to a depth of 3,275 feet, where roughnecks positioned a thermonuclear device. The AEC reported that the purpose of this test, as part of the Vela Uniform Program, was to assess the seismic effects of “high-yield” detonations located outside the NTS and to determine the suitability of the Moores Station area for additional large detonations. On January 19, 1968, the AEC detonated the device, which yielded approximately 1 megaton of explosive energy. The blast effects extended radially outward over 1,000 feet, violently heaved the ground upward 15 feet, and created a steep chimney that collapsed upwards toward the surface. Windows shattered at the White Pine High School in Ely, 87 miles away. However, this huge explosion did more than just melt and vaporize rock. Like a tectonic jack, the pressure rammed the bedrock laterally and created or reactivated two roughly parallel faults 0.9 miles apart northeast and southwest of the explosion. As these faults each ruptured the surface for 3,400 feet, a 340-acre keystone-shaped mass of rock and earth slid downward between them, settling as an irregular-shaped graben about 10 feet below the rest of the desert landscape. At the same time, the collapsing chimney created a minor subsidence crater at the surface directly above the detonation. Additional smaller parallel faults curved from SGZ and formed radial fractures at the surface. Contrary to its name, the Project Faultless detonation created one of the most bizarre faulting patterns of any underground detonation.

The AEC later drilled test borings into the shot cavity to sample the rubble and resolidified rock melt and to measure the chimney dimensions to assess the yield of the nuclear device. The large amount of surface faulting and fracturing forced the scientists to conclude that the Moores Station area was

geologically unsuitable for high-yield underground nuclear tests. The AEC eventually abandoned a second nearby emplacement shaft 3.4 miles to the north (codenamed “Adagio”) and moved all other high-yield underground tests to Amchitka Island in Alaska. The DOE completed its surficial cleanups and radioisotope surveys during 1973 and then returned control of the site to the BLM.

The Project Faultless graben is mute testimony to the geology-altering power of a nuclear explosion. At SGZ, an 8-foot tall, 6-foot diameter, rusted and concrete-filled steel casing juts out of the desert floor, much like the Bilby subsidence crater at the NTS. Before the ground collapsed, the top of this casing was at ground level. In 1973, the AEC bolted an engraved brass plaque onto the northern side of this steel casing to describe and commemorate the event. Several concrete pads and metal poles that were part of the original operation are located in the vicinity of SGZ. A large pit pierced with well casings is located near the southeastern edge of the graben. A hunting notification board is posted between SGZ and the eastern edge of the graben and states that this is Big Game Management Area 16, Unit 163. A nuclear detonation collapse crater is a somewhat unique place to be hunting.

Hot Creek Road and the base camp for Project Faultless are located north of U.S. Route 6, about 59 miles from Tonopah. The base camp is normally staffed by three to six Air Force personnel and contains a complex of metal buildings, equipment, and 7,200-foot runway. Based on the sophisticated aircraft tracking equipment present here and on nearby Halligan Mesa, personnel at this facility apparently assist with tests at the Nellis Bombing and Gunnery Range, the TTR, and the Area 51 Groom Lake facility to the south.

### **How Do I Get There?**

Tonopah is located approximately equidistant from Reno and Las Vegas and is the closest “large” town to the Project Faultless site. From Tonopah, drive east on Route 6 past the entrance to the TTR. Fifty miles into this desolate area at SR-375, you will pass the abandoned Warm Springs Café on the left. About 75 miles from Tonopah, you will see a sign for Moores Station on the right and an unpaved gravel road on the left. Turn left onto this road, and drive north toward the mountains and more desolation. The road will begin to bear northwest about 5 miles from Route 6. A stop sign marks an intersection 7 miles farther. Drive through the intersection, and continue west for about a mile through low hills on a rough road. You will reach the lip of the graben a little more than 13 miles from Route 6. This is a good place to pause and gape at the long fault scarps before continuing on to SGZ. The emplacement shaft casing at SGZ is located about 2,000 feet to the west. The gravel roads in the area are in generally good condition, except for the short section leading to the lip of the graben. Although a standard passenger car can make the trip, for safety use a four-wheel drive vehicle with tough tires. Federal government maps identify the

area surrounding the base camp and along Hot Creek Road as public BLM lands. However, government guards (not in uniform) have reportedly stopped tourists in this area and claimed it as Air Force property. You can take your choice of challenging the guards with BLM maps, or of turning around. The Project Faultless site is located at 38° 38' 3.5" North Latitude, and 116° 12' 55.2" West Longitude. While in this area, stay alert to the skies. You may have the opportunity to hear or see unusual secret aircraft flying in and out of the Groom Lake Test Facility, located 96 miles to the south.