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2022-09-11 the nevada national security site pt 1

I promised a travelogue, and here we go. Im not exactly a travel writer, but I was recently able to visit a place thats fairly difficult to get to, so I think its worth sharing my observations. I started writing this because I thought there should be more on the internet about the NNSS tour program and the site and tour as a subjective experience. Personally I absolutely love tours, not just to see things but because I think the tour guide and the design of the tour are often just as interesting as the site itself. When you take a guided tour you are sort of seeing a place through the eyes of its own public affairs department, and when it comes to the national security state that is an especially interesting thing to behold.

So this is, in part, a dry recounting of the NNSS tour and how it works. It is also, probably in larger part, my thoughts and observations on the historical and modern cultural role of the NNSS. As the location of the vast majority of US nuclear detonations, it is perhaps the most profound artifact of nuclear weapons. At the same time, it is seldom seen and, well, theres not that much in it to see.

The Trinity Site, with its twice-yearly open houses, is something of a mecca for everything from anti-war activists to the most hawkish cold-war enthusiasts. On repeated trips to the Trinity Site I have seen brash Texans and Buddhist monks, both in awe, but both in very different ways. The Trinity Site seems to encourage visitors to engage at a more philosophical level, perhaps due to the widespread knowledge of Oppenheimers quotation of the Bhagavad Gita, perhaps simply because there is honestly not very much to see there. You visit the Trinity site, at least if you know what its like, to find out what it feels like to stand in the shadow of the radiance of a thousand suns. There is no tour to speak of.

The NNSS, though, despite having a public tour program, receives far less attention. There is, you will find, a lot more to look at there. As a result, the NNSS visitor experience feels less emotional and more technical. At the same time, every feature the guide points out is imbued with that same radiance. The Trinity site is where a force of incredible destruction was first unleashed. The NNSS is where that same force was industrialized, refined, and made routine.

One of the first things you learn about the national security state is its penchant for renaming things. This is prominently true in the military, but you also see it in the Department of Energy. And so, the Nevada Test Site, having once been the Nevada Proving Grounds, is now the Nevada National Security Site. The verbosity of National Security Site is awkward but well in line with the Kansas City National Security Campus and Y-12 National Security Complex, down to being frustratingly inconsistent.

Thats all a preamble to explain that I will be referring to it as the NNSS, although

during the time period I will mostly be covering it was not known by that name.

I don't intend to write a proper history here, but not that many people are familiar with the NNSS (at least by name), so I will give the general background. The NNSS was established in 1951 in response to the need for a long-term proving ground for nuclear weapons. In the days of the Manhattan Project proper, testing had been rather scattered: the Trinity test, the first and most famous test of a nuclear device, was conducted in a barren part of central New Mexico, near the north end of the White Sands Missile Range and often described as near Socorro although a better (but much smaller) town to relate it to is San Antonio.

To many viewers this might seem like an ideal test site, considering the enormous size of the White Sands military reservation. That itself was a problem, though, as the Army made quite a bit of use of White Sands to the extent that the Trinity test camp was accidentally hit by pilots practicing bombing runs not once, but twice. Moreover, fallout from the test reached the Chupadera Mesa where it injured cattle and potentially ranchers. The extent of the radiological contamination of the Chupadera Mesa is the subject of ongoing controversy today.

For these reasons, subsequent nuclear testing was mostly performed in the Pacific Ocean. In 1946, two weapons were detonated at Bikini Atoll in the Marshall Islands. These tests badly contaminated Bikini Atoll and the region, as well as Hunters Point Navy Shipyard in San Francisco and potentially other sites at which Navy support vessels were decontaminated post-test. In 1948, three additional tests were conducted at the nearby Enewetak Atoll; contaminated topsoil from the atoll was interred under a concrete dome on Runit Island which is now in danger of failure due to tidal incursion. According to Los Alamos curious tradition of naming things after places it destroyed, Bikini Atoll and Enewetak Atoll are both streets in LANL's main office complex, TA-3.

These Marshall Islands tests were followed by a brief reprieve, lasting until 1951. A curious thing about the Manhattan project is how quickly it ended: after the conclusion of World War II, there was a brief period in which nuclear weapons didn't seem especially important. The weapons program almost shut down during this period, and there was no effort towards stockpiling. It briefly seemed like the whole thing might have been a bit of a one-off, not a major ongoing function of a nuclear state. It did not last.

In my eyes, 1951 marked the beginning of a real, organized nuclear testing program in the US. Prior to that had been scattershot experiments coordinated somewhat haphazardly. From 1951 onward, nuclear testing was operated as an ongoing business function, using an established process and permanent infrastructure. While testing would continue at the Marshall Islands for about a decade further, mostly to accommodate larger-yield tests, the cost of performing them so far overseas was tremendous. For the testing program to be cost-effective it needed to be domestic. Ongoing domestic testing required an area even more remote than southeastern Socorro County: southeastern Nye county, Nevada.

Over 1,000 nuclear detonations occurred within the ~1300 square miles of the NNSS. While the vast majority were underground, 100 were conducted above ground. The mushroom clouds were visible from the Las Vegas Strip. Fallout from these above-ground tests headed mostly away from civilization until Utah, where it almost certainly resulted in excess fatalities due to cancer. The underground tests left little evidence other than a vast valley of small craters, each the result of soil falling in on the glass-lined underground cavern created in milliseconds by the buried

weapon.

The NNSS is still in use today, although nuclear testing ended in 1992 following to the Comprehensive Test Ban Treaty. Perhaps the most dramatic activity today is subcritical testing, in which the pits and high-explosive components of nuclear weapons are tested under real detonation conditions but with too little radioactive material to achieve criticality. Because of the involvement of both nuclear material and a lot of explosives the process must be treated much like an actual nuclear test. The site is also used for long-term disposal of low-level nuclear waste from the weapons program, counter-terrorism testing and training, and the National Criticality Experiments Research Center, one of only a few sites capable of conducting experiments with quantities of nuclear material that could become critical.

It is an odd happenstance that the NNSS is both exceptionally remote and only about an hour from Las Vegas. This makes it something of a tourist destination. In the days of atmospheric testing (the 50s to early 60s), tourists used to visit Las Vegas during announced tests in hope of seeing the flash and cloud. Today, it is possible to take a tour, although not especially easy. Public tours are held nominally once a month and have a capacity of about 20 people. They're usually full up well in advance. Some years ago I had set up a script that would check the webpage on tours for changes and notify me, so that I could apply for a tour as soon as the next batch of dates were announced (usually about six months at a time). I succeeded in reserving space for myself and my husband on a tour in early summer 2020.

You might remember some things about early summer 2020.

By the time our tour date came around, all tours had been canceled indefinitely due to COVID. I was somewhat skeptical that the tours would ever come back, given the small scale of the operation and the presumable complexity of its security plan. But fortunately, several months ago I got an email from the tour coordinator that they were picking tours back up. She was offering the upcoming dates to the people they'd canceled on. I was able to snag a tour date in mid-August, which largely by coincidence ended up matching up neatly with a period of unemployment before I started a new job [1].

I had planned to hike Tikaboo Peak (viewpoint to Area 51) and visit some other national security sites that week but, owing to Nevada summer weather and my own desire to put in as little effort as possible, ended up spending most of the week luxuriating in the clingy embrace of Caesars Rewards while riding every form of transportation I could. While I do indeed have videos of both monorail (Bombardier Mark VI, of course) and APM (Doppelmayr Cable Liner), I am doing my best to avoid dancing off the cliff and becoming a train vlogger. Instead, I am going to tell you what its like to take a public tour of the Nevada National Security Site.

First: if you would like to do the same, you can learn about it here. According to that website tours are booked through June 2023. I would recommend that you watch that website carefully and submit your badging form as soon as more dates are announced; I would anticipate that H2 2023 tours will fill very quickly. There are also administrative details: tours depart from the National Atomic Test Museum in Las Vegas near the strip. Cameras, phones, binoculars, and bags are prohibited. The tour leaves in the morning and takes the full day. Much of this is because of the distances involved: it is about an hour drive from Las Vegas to the site, and about another hour from one end of the site to the other. I believe we were told the tour covers about 270 miles. Fortunately we were on a comfortable coach with a gregarious tour guide, former public affairs manager Darwin Morgan.

I will discuss the tour stops in no particular order, mostly because I'm not sure that I remember the order correctly. I'll also give the caveat that the NNSS staff seem to be actively working to both improve the tour and accommodate activity at the site, and so the itinerary will likely change with time.

The first item of interest in the tour comes as you approach the entrance to the NNSS, on Highway 95, a generous four-lane highway improved to its large size to accommodate the huge number of people that commuted between the site and Las Vegas during the days of active testing. Today it is mostly empty, particularly since it spends most of the distance near Las Vegas either in or adjacent to the various military reservations that make up the broader Nevada Test and Training Range (NTTR). It's important to understand that an enormous portion of the state of Nevada is reserved by the Federal Government for various defense uses. The NNSS is just one part of this sprawling complex. Area 51, for example, is not especially far from the NNSS but is not part of it. The NNSS is also not the Department of Energy's only secretive operation in southern Nevada, as the Tonopah Test Range of the NTTR is operated by Sandia National Laboratories. It is also known as Area 52 and is near its more famous numerical neighbor.

Driving out highway 95 you pass by Creech Air Force Base, a surprisingly small but densely packed Air Force installation used by UAV pilots. Our guide promised that you can almost always spot UAVs on approach or departure, and indeed it only took a moment to spot an MQ-9 Reaper performing touch-and-gos. It is reassuring that some of the military's most sophisticated aviation technology still relies on such conventional training techniques. One wonders if somewhere in a nearby building an instructor was nagging too high, where's the needle? Of course the airfield is less of the main feature than the many small buildings around it, as most of the pilots of Creech AFB are flying aircraft over a very different desert.

At around this point our tour guide explains a bit about the oddity of the NNSS's long commute. Most nuclear weapons installations of the era provided staff housing, but NNSS employees have long faced a rather tedious drive, and a dangerous one given the drinking culture of the time. There had been a plan to build an atomic town on the edge of the site for its personnel, but the extremely low water table and budget limitations prevented any serious efforts. The closest town is Indian Springs, directly across from Creech AFB, which had at the time been somewhat eschewed due to its poverty (much of the town has the feeling of a trailer park facing hard times). Of course, the large staff of Creech AFB has brought a change in fortunes and Indian Springs is now seeing quite a building boom.

A bit closer to the NNSS is Cactus Springs, which had consisted largely of a gas station and bar which was apparently popular with NNSS staff. With the end of nuclear testing came the end of the bar, and today Cactus Springs is home to the Temple of Goddess Spirituality, constructed just after the end of testing in 1993 and tended to by spiritualist Genevieve Vaughan as a shrine to the Egyptian god Sekhmet. This situation is a bit hard to parse but reminds you that the desert is full of strange and wonderful things.

On the approach to the NNSS gate, our guide points out the Desert Rock airstrip. Desert Rock was, at its peak in the 60s, a fairly large Army camp built to support operations at the NNSS particularly the testing of nuclear effects on Army equipment and personnel. Yes, personnel. If you have heard the stories of only partly-witting Army soldiers taking shelter from nuclear blasts in trenches only to emerge from those trenches and march for ground zero, you have heard of the Desert Rock exercises. As it turns out, the radiation exposure from these experiments was generally kept within

the 3 rem safety limit established for the program. Epidemiological research has found an increase in leukemia in participants in these tests, although not one so significant that it is clearly related (there being known confounding factors, such as the very high rate of smoking in the military at the time).

Today, little is left of Desert Rock besides a field of concrete pads (from tents and temporary buildings) and an airstrip. Our guide explains that, as the closest airstrip to the NNSS, it is still maintained to some degree for emergency use. Desert Rock is more interesting to me because of my peripheral knowledge that it is the subject of conspiracy theories: Desert Rock receives very few aircraft and has nearly no support facilities, but for a time was visited somewhat regularly by a set of business jets owned by known CIA fronts. The resulting accusation that NNSS hosted some sort of black site have never been confirmed and are not, to my mind, very credible. A bit of imagination will develop more likely motivations for CIA activity at the site.

Just as the bus pulls off the highway, we pass a set of signs warning off wanderers. Our guide explains that the bold white line painted across the road here is the boundary of the reservation, and that during the era of more active anti-nuclear protest the Nye County Sheriffs Office was on hand to arrest the crowds of demonstrators that would regularly march over it. These activists were held in a set of chain-link pens just by the road while the sheriffs deputies wrote citations and were then sent back over the line to public land. This symbolic criminality, civil disobedience in perhaps the most pure form, happened regularly for many years.

Today, the specter of nuclear war is largely forgotten, and along with it the large-scale, organized anti-nuclear movement. Very few demonstrators bother to visit the NNSS, as is the case with other nuclear weapons complex sites where even major traditional protest dates like the anniversary of the bombing of Hiroshima turn out only a few people... people old enough that they had lived through the Cold War. It has always felt to me that the nuclear weapons program attained its current state of acceptance not through any actual change in public opinion but simply by attrition. Nuclear weapons have been around long enough, and with little enough impact on the world, that few can be bothered to care.

The tour enters the NNSS, as essentially everything does, at Mercury. The security checkpoint is some distance past the reservation line (this seems common at this type of installation, I suspect so that it gives errant drivers time to discover their mistake and gate runners very few excuses), and the town of Mercury is just past it. Mercury is nominally a town, and has a post office to bolster that claim, but it has no population and serves instead as the main post for the NNSS. Our guide points out the fire station, the post office, and an imposing concrete building that houses the Operations Control Center from which the whole site is run.

As we passed through Mercury our attention was called to a set of newer buildings. Our guide explained that the NNSS was having a hard time hiring and retaining staff and that the Cold War-era work environment was thought to be part of the problem. A building program had been started to transform Mercury into a more campus-like installation that would appeal to young people.

We stop for coffee and a bathroom at the Mercury cafeteria. I commented here to my husband that I find the campus-like construction effort to be a real shame. The history of the nuclear weapons program, having grown so abruptly to massive scale in the 50s and 60s, has given it a curiously consistent aesthetic. Simple rectangular buildings with cast concrete segment roofs and breeze-block screens over plate glass

windows. Heavy wood paneling in an effort to add aesthetic interest. Suspended fluorescent lights with sheet metal baffles, at least a third of them dead or dying. Everything, everywhere, painted the same shade of tan.

This is, of course, a description of anything built by the army in the mid-century on a tight budget and even tighter schedule. Both in conceptual and historical terms, it is one step nicer than a row of Quonset huts. But it is a consistent look, and as a result your average Department of Energy installation looks more harmonious than a university campus with a 300-page architectural master plan. More significantly, I think it maintains a certain important spiritual connection between the weapons complex today and the Cold War. Philosophically, it might be important for the staff there now to remember that they are operating a legacy of a foregone time. Efforts to modernize the buildings, like efforts to modernize the weapons themselves, come with a degree of danger.

After our brief visit to the cafeteria, we re-boarded our bus and continued over a low ridge into the test site itself. And thats a good cliffhanger, so hold on for Part II. Im currently in Fort Worth for a long conference, so I have quite a bit of free time and not a lot else to do. That means *posting!*

[1] Im now with GitLab in professional services. Thats right, if you spend enough money on GitLab, I might come with it! Opinions are mine and not those of my employer, except for the bad ones, which are the opinions of someone else that Ive never met before and certainly did not arrive here with.