Nevada Test Site Oral History Project
University of Nevada, Las Vegas

Interview with Wayne Violette

January 12 and February 3, 2005
Las Vegas, Nevada

Interview Conducted By
Suzanne Becker

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[00:00:00] Begin Track 2, Disc 1.

Suzanne Becker: *OK, so if you just want to start out with some background about yourself, where you're from.*

Wayne Violette: I'm sixty-three, born in 1941, May of '41. I was born in Montana. We moved from Montana to Idaho when I was three years old. I grew up in southeastern Idaho. One of my earlier memories of the test site and atomic testing, it was probably my first introduction to it, was when I was in my preteens and we would hear the countdown on the radio, and they would have it on TV, too.

In Montana?

No, this is in Idaho, southeast Idaho, by Idaho Falls a ways. And my dad was interested in the testing and quite a few different things. So we would hear the countdown early in the morning and get up, oh, five a.m. or so and look toward the south and we could see the glow in the sky in the fifties when they were doing the atmospheric testing here. And we lived close to the test site, the NRDS, National Reactor Development Site, in Idaho [Idaho National Laboratory and different from NRDS, *Nuclear Rocket Development Station* at the NTS]. When I was younger, a lot of people out there worked at the AEC out there, Atomic Energy Commission, and that was where they had the reactors, near Arco. So I always would say when I was younger, `Yes, I'm going to work for the AEC when I grow up`, you know. But I never thought I really [would]—that was when I was much younger.

And then I went to school. My dad was taking a course in electronics, so when I got out of high school, I had a choice whether I could either go in the military or go to school, so I

thought, Well, I better go to school. That was one of the more sane things I did is I thought, I'd better go to school rather go in the military because I can do that later. While the opportunity is there, I'll go to school. Am I going into too much personal stuff here?

No.

I didn't like the courses when I was going to high school. I didn't like English and some of those things, and maybe you can tell by my speech I didn't. But anyway, I decided to go to electronics school because my dad was taking the course in TV and it kind of steered me toward that. So I went to Idaho State College in Pocatello, Idaho, which was about a hundred miles south of where we lived.

Oh, I've actually been through there.

Have you been through Pocatello? And I took a three-year course in electronics there, not knowing what I would do when I got out, but at least I would have the education behind me then.

So when I completed the course in electronics, EG&G [Edgerton, Germeshausen, and Grier] from the test site here in Las Vegas, or here in Nevada, came up there and were interviewing students. And they had picked students from there a year or two before, too. So we talked to some of them that were working for EG&G down here. And at the time I was making $1.35 an hour while I was working after school at Ford Music Company there in Pocatello. Well, I got an offer from EG&G after the interview for $2.35 an hour. I thought, wow, that's a dollar an hour raise. But then we were talking to the guys that worked and they says, `It's a hundred miles to work and it's a hundred dollars a month for an apartment.` I thought, man, that must be a great apartment, because a hundred dollars a month was a lot of money back then.

So EG&G interviewed me. I remember one of the questions they asked me was, `How would you describe impedance to your little sister?` Well, I didn't have a little sister, but I gave them an explanation of that. They caught me off guard with it. But anyway, I was hired. There were about four or five of us from the school that got out of school and were hired and came down here.

I came down with a fellow named Wayne Rose. My name being Wayne Violette, it was kind of ironic that we both had the same first name and both had a color or a flower for a last name. So we drove down here and it was right after the fourth of July in 1962. It must've been the eighth or ninth—some days after–it was just right after the fourth. And we met in Wells, Nevada. He came down from Oregon, Wayne Rose did, met in Wells Nevada and we drove down here to Las Vegas. We got an apartment here in Las Vegas and we hired in to EG&G, went in there.

And that's when EG&G was over on Wall Street. Now I worked at Wall Street probably for a couple of weeks till I got my temporary clearance. And I was wiring up things there and everything. And then I got my temporary clearance. And a guy by the name of Duane Knuth [sp], they called him Drano, I don't know why they nicknamed him that. He drove me out to the test site and I thought, oh no, what've I done. It was *so far* out there and I thought, every day will I have to go through this to go out here to the test site and back? But it wasn't driving out every day, it was taking the bus after that, so it wasn't too bad riding the bus because you could sleep on the way out. I'd usually read on the way back, and a bunch of guys would be playing cards. And we **[00:05:00]** didn't have—I wish we had had, but we didn't have the portable tape players or the portable DVD players then that would've passed time a lot. But I spent a lot of time

reading and a lot of guys, like I say, would play cards or they would sleep. I could usually sleep going out. I couldn't sleep coming in. Am I going into too much detail?

No. And that was about an hour ride from here?

Yeah, it was probably an hour and a half, depending where we worked, beyond the control point [CP]. We would be at the control point at eight o'clock and then we would leave the control point, or Mercury, actually. Our time was from Mercury to Mercury, so we would get to Mercury at eight and then we would pull out of the Mercury gate, at five. And depending on how far up we worked was how far it would take us to actually get to work. But my original job was out at Rover. Well, I want to mention one thing. We got *per diem*, too. It was five dollars a day *per diem*.

Wow!

Yeah, for riding out there, and I remember some of the guys didn't tell their wives they were getting *per diem* because it came on separate checks, so that was their play money. Twenty-five bucks a week could go quite a ways then. Then they started to combine the checks and a lot of guys had a lot of explaining to do as to where that extra money was coming from, this kind of thing.

But my first job was out at Rover. I worked on the Kiwi project out there. I was a technician. I had a lot of interesting experiences out there. It was my first job and I was just twenty-one years old, but it was fun.

What kind of interesting experiences?

One of the experiences I had—I still had my red badge when I was out there. When they brought the reactor from the MAD building, Material Assembly Disassembly building, they would hook it up to where we did the instrumentation at Test Cell A. Test Cell C was just being constructed

then. So they brought it in one time and hooked it up and actually tested it. Well, I still had my temporary clearance. I didn't have my Q-clearance yet. So me and a couple of other guys had to go over to Test Cell C and we had to stay inside during that time. I guess it was top secret and they didn't want anybody without a clearance even seeing it. But I can remember the ground shaking and hearing a roaring and that was a good, oh, maybe a mile or so away. The power that it generated was just tremendous.

One time when I was working with some other guys in the Test Cell A, the reactor wasn't there yet. Or maybe it was. It must've been. But the bells and whistles started to go off inside the building and somebody opened the hatch and said, `Let's get out of here`, so we all crawled down this ladder into this tunnel and started running down the tunnel. I had no idea where I was going, what was going on, whether we'd been radiated or anything. Then we found out there was a test. But I'd have ran right off the edge of a cliff with them if they'd gone over because I was sticking with the group. I had no idea what was going on and I didn't know I could run that far, that fast. When you don't know what's happening, it's kind of interesting.

I saw the last atmospheric that was set off out there, but unfortunately I wasn't able to see the actual blast. We were sitting in the chow hall and the curtains were open and we were sitting there eating and there was a bright white flash inside the chow hall and somebody said they set off an atmospheric, so we went outside and could see the mushroom cloud rising over the hill. We were looking toward the northeast from where I was at in Area 25.

Could you feel it at all when they did it?

No, I didn't feel it a bit because it was atmospheric, so it didn't shake the ground. But we did see the flash and I thought it was quite impressive. It was in the middle of the day, the bright flash. They say it's brighter than a hundred suns.

First one you saw?

Well, other than the ones that I saw when I was in Idaho, looking toward the south, yeah.

Right, the flashes. Yeah.

But that was the first atmospheric that I had seen, and I think it was Little Feller I or Little Feller II, and it was the last one set off. [The tests were not in chronological order. Little Feller II was conducted on 07/07/1962 and Little Feller I, ten days later on 01/17/1962. Little Feller I was the final atmospheric test conducted at the Nevada Test Site]

Then underground testing started to increase, and I forget, it was something to do with either the Russians, or they had signed an agreement to where there would be no more atmospheric testing and they needed people over at the—that was weapons testing. So that was probably in the fall of ’62. I didn’t spend a lot of time at Rover project. But in the fall of ’62, they took me over there and introduced me to my supervisor and the crew. From then, the rest of the time that I was employed by EG&G and at the test site until 1971, I worked at weapons testing.

Can you talk a little bit about working with Rover?

Yeah, I’ll come in with some of the guys that worked with me. A gentleman named Ray Wynn who was kind of our group leader there. He was [a] very brilliant young man. He played classical piano and I was really impressed with his knowledge. Some of the others I worked with there, Jerry Star [sp], Maro Fardo who was from Sao Paulo, **[00:10:00]** Brazil. But what I did was primarily work on instrumentation. Ray Wynn was building some pico meters, pico amp meters which would measure very low currents, and we would have very high resistance resistors. I remember we would have to clean those with alcohol before we would check them because even your handprints on them or your fingerprints could cause the resistance to change. Worked on

that. It's been so many years ago, forty-some years ago, that I don't remember a lot of the details. Worked on things called NIXIE tubes for readouts because they didn't have the LEDs [light emitting diode] and the LCDs [liquid crystal display] back then. And we would take a nuclear source and it was on a long metal tube, pole, and they'd say, `Don't hold it close to your body, just to carry on out there with you`. So we would take that up to the Test Cell A for them to calibrate instruments, things like that. As far as details, mainly I was a technician and I just did what they told me to. It was an interesting job.

But going to weapons testing, weapons testing to me was much more interesting. You weren't sitting doing one thing all the time. It was a lot more variety. I enjoyed the people I worked with there, in particular. In weapons testing, I worked in what's called the skids. It was the instrumentation portion of it. You're called an alpha tech. Nuclear instrumentation diagnostic technician was our official title. But to me, that was *really* interesting because we would set up for a shot. Being set up in the skid, we would get the information as far as how the equipment had to be configured, and there were delay cans and attenuators and oscilloscopes and cameras and everything. We would set that up, depending on what the particular parameters of the particular bomb we were going to be doing the instrumentation on were, and that would come from the physicists at Los Alamos [National Laboratory]. There was a lot of hard work involved, and most of us were quite young. Most of us were in our twenties. It was a lot of physical work as far as lifting the delay cans and on your feet all day. and we worked hard. We would be setting up the cameras, doing a lot of tests, doing a lot of—our crew was the alpha technicians, the diagnostic crew. There was a high-voltage crew which was called detectors, and they would put the detectors on the canister. This was all underground testing. They would put the detectors on the canister and do the instrumentation on those. We would be taking the signals from those

detectors that were on the canister when the bomb went off. They would travel by cable into our skid. Of course, we wouldn't be there when the actual bomb went off, but we would set up all the equipment ahead of time. So there was a lot of hard work, but like I say, we were young and we enjoyed it.

Long days, it sounds like.

Yeah, we'd go out there sometimes—well, it was long days from here. We would leave here like six or six-thirty in the morning, just a normal day, and then get back here around seven at night. There were times in the winter when I never would see my yard or my house in the daylight. So it was long days; that's one of the main reasons I left after nine years. I loved the work but it was just the long rides and the long days. In later years, a lot more was done in town.

But a lot of interesting experiences out there. One time—well, we did testing on Area 3 primarily. It was most of the underground testing. We did some testing up on Rainier Mesa and Pahute Mesa, where the larger tests were done. We did one test—I remember on Rainier Mesa when we were doing that one, we had our instrumentation set up *above* where the bomb would go off, but the bomb was away back in a tunnel. I had crews working down in the detector shack, or down in detectors below, and I had people working up in the alpha shack. I was a supervisor at that time. I went from a technician to a lead tech to supervisor. So when I was a supervisor on that one, that was twenty-six miles from one crew to the other to drive back and forth, yet it was only probably a few hundred feet between them on the actual Rainier Mesa.

We had one that went off on Pahute Mesa one time. What happens on a shot is it—and it digs a big cavity, it burns a big cavity in the hole, and as the top caves in, it gradually works its way to the top and then it craters. I think they call it "subsidence" or something like that, but we would call it "cratering."

That's when the ground caves in after the test.

Yes, after. Some would not crater. Some would. We set off one very large one up at Pahute Mesa. I don't know how large it was. Whenever there was a test in Area 3 or up at Pahute Mesa, we would go back to the control point for the test **[00:15:00]** because there was just too much ground movement and dangerous to be near the shot. We set that test off at Pahute Mesa and we watched it. Several hours we watched the cratering. You could watch the seismometer, and you could tell whether it was going to crater or not, because as it worked its way to the top and the earth fell in, you would get some ground movement. Well, finally when the ground movement stopped completely, you'd figure it's not going to crater. There can be some ground movement when it craters and there can be some radiation released. We watched it. And the roads were out, too, because the test shot had been big; it had wiped out some of the road we had to take to get up there because it was in the mountains. When it went off—the CP, which was several miles from there—the ground shook so much that the lights came down, the power went off in the CP momentarily, and then we heard this *boom! boom! boom!* Then we stepped outside, and here came a big rock from up on the—it was mountainous back in the Rainier Mesa. And the size of a freight car was coming bouncing down the mountain. Luckily there was a big gully between us and the CP, so it stopped in that gully.

Sounds like a strong shot.

It was pretty big, yeah. Most of the bigger ones, they were further out there. I don't know if it's the ground terrain or not, but it was further from Las Vegas. We would fly back and forth out to there, too, when it was further out like that because it was just too far to go on the bus.

Anyway, we thought it was going to stop cratering, so they said, `OK, we can go in now.` But the roads were out, so we had to take a helicopter. The helicopter took us into the skid

where all the instrumentation was, and when you would go in—this was actually done on film. When the bomb would go off, there would be oscilloscope traces recorded and it would record like the alpha growth rate of the bomb. The first few thousandths of a millionth or nanoseconds of the bomb going off is what the critical information was because after that it was all over.

And is that what you guys looked at?

Yes, the first few nanoseconds. That's where they would get most of their information as far as the effectiveness of the bomb and the efficiency of it, and I'm not sure what the physicists were really looking at, but the alpha growth rate was primarily what we were looking at, right at the very beginning. Those signals would actually travel up the cables and get to us before the equipment would be in the hole by the bomb. The detectors and everything would be destroyed. So the signals would come up to us, and by the time it got to us, it was destroyed where it came from.

But we went in. I think it's all probably digital now, but this is back in the sixties, so it was actually done on recording, traced on these oscilloscopes on the film. What we would have to go in on recovery, we would go in there in the dark and we'd close the shutters on the cameras, we would remove the film, put it in lightproof boxes and then bring it back for it to be developed. So while we were in there, well, what we'd do with the skids were, there was a light lock room where the office was when you would first walk in, and these skids were probably fifty feet long by thirty feet wide by twenty feet high.

When you say "skids," you're basically describing a—

Instrumentation trailer. It wasn't a trailer but—

Something that was set up for you guys to go into.

Yes, it's our instrumentation building. When they would move it from one location to another they would lift it up, put it on tracks, and pull it to the next location.

OK. So these were portable.

Right. It was portable—

Like a portable lab.

Yeah. It wasn't like a trailer. You wouldn't pull it, it wasn't on tires. But they would lift it up, put it on these big tracks, and then pull it to the next location. There must've been five of them. Well, I don't know, it was Skid 3, 4, and 5, I recall. I don't know what happened to 1 and 2.

But when we went in, the helicopter took us up to Pahute Mesa after it looked like it wasn't going to crater. We had to suit up and put on our boots and tape up and everything because it was in a radiation—there was a RADSAFE [Radiological Safety] person with us. And we went in on recovery. We went into the office part, and I remember that the office was just in disarray. The desk had been driven through the floor and it was just really tore up in there. So we shut that door to get as much lightproof as we [could], because I remember light was leaking through the door. Then we went back into the actual instrumentation portion. A lot of times, when it's a really big shot like that, things can be in disarray. You have to look for things because the equipment [is] shaken off the racks and the delay cans might be coming down. So we got in there, shut the door, it was pitch black, so we were groping around in there, looking for it. We had the RADSAFE guy in there with us. Then we felt the ground shaking. It cratered while we were in there. Well, meanwhile he was checking radiation and I don't think we got any radiation. We managed to recover all the film and then—the helicopter had lifted off, though just in case it cratered. They didn't want to have a helicopter put out of commission. He set back down and we took our stuff in and went back to the control **[00:20:00]** point again with our film.

There was a piece of paper that you would get because they wanted to print out the exact frequency of a particular oscillator at zero time. One of my jobs was to recover that. I had stuck it in the white overalls we were wearing. I forgot all about it, and then I got back and I thought, oh, no, we need that piece of paper. I had to go back and dig through all the overalls. I recall I had a sick feeling in my stomach when I knew that wasn't there.

Some of the shots really tear things up. They drive the desks through the floor and things. Now that I've seen some shots at the museum of how much those trailers bounce around on the skids, it gives me a lot more appreciation for what the equipment went through while I was there.

I had the opportunity, too, while I was working at Area 3, when I was a supervisor—we'd fly to Albuquerque and then go up to Los Alamos and meet with the physicists. I got to go through the museum, through the Oppenheimer Museum [the Los Alamos Laboratory Museum was established in 1953 and opened to the public in 1963. It was later renamed the Bradbury Science Museum in honor of laboratory director Robert Oppenheimer's successor, Norris E. Bradbury]. We would meet with the physicists and get the data that we needed to—how our setup would be for our instrumentation, then we would come back and lay it all out as far as how we wanted to set it up. That was fun. I know the one engineer that I would go back to Los Alamos with, he was Hispanic, Lee Sandoval. I think he still works out there. But we would go back to Albuquerque; his family was from there, so we'd go eat at some interesting Mexican restaurants—they had wooden floors and they were from the 1700s or in that area.

Authentic, sounds like.

Oh, very. So we'd go back there and get the information and bring it back.

I was also sent for two or three weeks to Albuquerque to work on some of the—I think KC-135s, they're 707s, I believe—was the civilian name for the planes. We went back and we

worked on those for putting equipment in them; they were preparing if they went to atmospheric testing again. These had a big window on one side and the equipment was set to where they could take pictures out of it. I had my particular little thing to do, installing certain equipment, so I wasn't privy to a lot of the details of what they were doing. But that was very interesting, too, to go back there and just be part of it. Sandia built the bombs, and Sandia Labs was back there. That was a fun time, too.

And then I had the opportunity to go to the Aleutian Islands, to Amchitka [Alaska]. So we set the equipment up. It was like we were setting up a skid, but we set it all up in a warehouse and did all the testing on it. Then it was all numbered, crated up, and shipped on a barge up to Amchitka in the Aleutians. That's way out at the end of the Aleutian chain, not too far from Russia, as a matter of fact. I was on the one called Milrow, It was an island test more than anything, to see how the island would withstand the larger test, which was Cannikin, I think. That was going to be the second test. Well, I was on the Milrow test, I wasn't on the second one. But we flew up to Anchorage [Alaska] and then from Anchorage we flew out to Amchitka. After we shipped the equipment out on the barge, it was probably a couple of weeks before we went up there because it took that long for the equipment to get there. Then we uncrated everything. There was a permanent bunker, like underground bunker, set up to set our instrumentation—I think it was an underground bunker. I could be incorrect on that. But anyway, there was a building set up to put all of our equipment in that we had set up in Las Vegas. So there were several of us technicians went up there, put everything together, and set up for the shot up there. We had to cross-train for different type jobs while we were there, in case somebody didn't show up or somebody got sick. I was cross-trained to process the photos, mixed up the chemicals and everything. So when I went up there, until the photo techs got up there, I did dual duty. I was a

lead technician at the time, so I did dual duty as far as setting up the instrumentation, as well as doing the photography part of it, too.

You would set up the cameras and the cameras would be triggered when the—?

Yes, the shutters would be opened and the cameras would—

When the blast would go?

Yes, we'd set them up. There were delay cans to delay the signal to where the scope could be open by the [time the] signal got there. So before the signal would get to the delay can which would delay it a few nanoseconds, it would be a trigger device that the signal would also go to, and that would open the shutter on the camera and signal the scope to—

In the photos, what were some of the things that you were looking for, or do you know?

[00:25:00] Well, the photos weren't actually photographs of anything but the oscilloscope trace. And there would be an oscillator on the oscilloscope. I think there were 50, 100, 200, and 400 megahertz [MHz], megacycles we called them, changed to hertz when we were there. They were set up to 400 MHz, the fastest scope, and the trace would be moving back and forth at four hundred million times a second. Then as the signal from the bomb would come in, it would deflect that trace in an upward motion, so we would get a trace that looked sort of like a sine wave that was being stretched toward the top. They could tell the time between the peaks of the signal, and then they could tell the distance *versus* the time and tell how fast it was growing. Does that make sense to you?

Yes.

We didn't process—we came up with negatives. They would look at the negative. It was actually a negative image. It looked like a dark image on a light background, rather than the white image on the dark background. When we would set the equipment up, we would have to get them

focused exactly. Very critical on focus and getting the right intensity so they would be the best image possible. We used a lot of Polaroid film doing that. We'd go through boxes and boxes of Polaroid film on the setup of it. The actual photo, though, was then done on an actual negative. So I know Polaroid must've made a lot of money off the test site because we used a lot of that, and yellow tape. Anyway, Amchitka was very interesting.

What was it like out there?

Well, a lot of guys complained all the time they were there. They didn't like it. It was foggy a lot. They played cards and drank and complained about being there. But me and a few other guys, we decided to make the best of it, so we worked six days a week, ten hours. Eight-or-ten-hour day, I can't remember now. We worked six days a week to get the most time in, and we had Sundays off. Well, there was so much daylight there that we would have to work. We would go fishing a lot. We'd go down fishing or maybe go exploring. Amchitka Island was one of the ones during the Second World War. I don't know if there were battles fought there or not like there were in Attu, because Attu was the one where I think the Japanese just about—they didn't want to surrender. A lot of them died. But they had been on Amchitka, the Japanese had, and also our troops were there, too. I don't know if they were there at the same time, if they battled there. But when we walked around the island, we had to be careful. There were holes dug with sharp metal rods sticking up out of them so that the soldiers, if they were running across there in the battle would fall and impale themselves on them. So we had to watch for those. There were a lot of barracks down on the Bering Sea side. We'd go down there, and there were still old cans, rusted cans of C-rations down in those, too.

It was very interesting. Did a lot of beachcombing. Found those glass balls that were on the beach there. I found a whale tooth. And we would save our fish and then we'd have a big fish

fry sometimes at the old officers' quarters that were still on the island, or we would have steaks. They fed us *really* good up there, too. To keep people up there, they had to take good care of them, so I know the food was really good there. They even had a scale, when you would eat, [to] keep track of your weight because you could gain weight real easy up there. And we were in a bunch of barracks there that was pretty—they weren't barracks, they were two people to a room. Had a movie theater there. I thoroughly enjoyed it because of the beachcombing and things like that.

I don't know if I should say this or not. I don't think we'd get in trouble for it anymore. We built a raft. A bunch of us were fishing and we decided, well, if we build a raft, we could get further out on the Bering Sea and get some better fishing. So we got a bunch of rope and then we had our four-wheel drive and we found some driftwood and a bunch of planks and big nails. We built a pretty nice raft. It must've been ten feet by fifteen feet or so. We had our rope. And we were going to let the wind blow us out there into the—you got to understand, I was just young then, young and foolish. I wouldn't do this now. We thought we would let the wind blow us out to the Bering Sea a little bit—couple hundred feet of rope, we could go out there and get some better fishing. Well, we had the raft all built and the rope there, and then we went back to our rooms one night after work and there was something on everybody's bunk, "there'll be no unauthorized watercraft on the island." So we never went back to the raft again. We stayed away from it.

It was a good idea though.

Oh, it was a great idea. I've got some pictures of it I need to get. They're on slides.

[00:30:00] It was foggy there a lot. I'm of Norwegian descent, so I enjoyed the cool weather and the fog. I don't know if it was somewhat genetic or not, but I just love that kind of

weather. It was one of the most beautiful places. I remember once we hiked down to the Bering Sea side, me and a fellow named Jim Haskin. We hiked down there one time. One of the most beautiful places I'd ever been to, it was like out of a fairy tale, with the stream running down and the flowers. It was all tundra. There weren't any trees. The only trees that were there were by the officers' headquarters where they'd planted a couple of trees, and they called it the Amchitka National Forest. But we hiked down there, and talk about beautiful. The water was just crystal clear and just really beautiful.

One time we hiked—do you want me to go into this sort of thing?

Yes.

One time we hiked to go fishing. We parked our vehicle on the road. It sounds like all we did was fish and have fun there, but this was in the evenings and on Sundays. The rest of the time, we did work. But we parked our vehicle on the road and hiked down over to the ocean, which was probably, oh, three-quarters of a mile or so across the tundra and then down the cliffs. We had to climb down the cliffs. Meanwhile, it was foggy there. Well, when the fog rolled in, we had no idea how to get back to the truck. So we hiked up and we just kept the sound of the ocean behind us, watching those holes so we didn't get impaled on one of those spikes. Got back to the road and then we had no idea which way the vehicle was from the—which way to go. So one of us went one way and the other one went the other way, agreeing that the first one that found the vehicle would turn around and come back and pick the other one up. We made it out of there. But the fog would get so thick, you couldn't see three feet in front of your face.

That is thick.

Most of the pictures I took when I was up there were when it would clear, so the pictures looked like it was pretty clear all the time. But we had a lot of fog. And that was enjoyable.

We went up there for a couple of weeks, came back for a week, had a week off, they paid us for time off, came back for a week, and then went back up again for two or three more weeks, and then came back. We were *really* ready to get out of there. There were no girls on the island, none at all. So we would go out to the plane when it would come in, Aleutian Airlines just to see the stewardess and wave at her.

It was a fun time, though. I remember once what I did while I was up there. All the guys up there were kind of roughnecks—a lot of guys. I had a red sweatshirt and I threw it in the laundry for some reason with all of my underwear and they all came out pink. So I was wearing pink underwear all the while I was up there. I had to be very careful the guys didn't see my pink underwear.

But that was really a great experience. I had a lot of fun up there. We were on the island when the shot went off. A lot of people, they took them out on the ship.

What was that like?

It shook real good. We went to the other end of the island during the shot. But it shook real good. So it was a big test, but like I say, it was two tests to see how the island would handle the bigger test.

They took a lot of the otters, the sea otters, off of the island before the test went off. I think they took them to repopulate some of the shoreline along the main Alaska coast right off of British Columbia. They didn't take them all, but they took a bunch of them out of there.

They brought special dirt in, I remember, too, special sand in to backfill the holes. They were very careful about restoring the island to what it was before when they set those tests off. I know they had to be very careful as far as not damaging the natural habitat there. So they were quite conscientious.

And you think they did a pretty good job of cleaning up and restructuration?

I thought they were. Some of the old piers that were there from the Second World War were interesting. They were all pretty much broken down, but you could still go out on them. You could see the military equipment that they had left there after the war. There would be a cliff and it was just all made up of old Jeeps and tanks and everything that they had on the island—just rusting away.

They just left it.

I think it was probably more economical just to leave a lot of that stuff than bring it back.

It was really an interesting time. It was probably in 1969 that I was up there, and then I left the test site in 1971. I went to work for the phone company from there. I wanted to get a job where I could use what I was learning throughout the country, and I knew that the testing—and every year, the contract would come due and you would wonder if you **[00:35:00]** were still going to have a job or not. But the best job I probably have ever had was out there because I was young, it was more interesting, and it was exciting work. It was not boring. You did something different all the time.

But I went to work for the phone company. *Then*, while I was at the phone company, and this has a little to do with it, they deregulated, and so there was an opportunity to go to work for a company called StarNet, that was briefly in Nevada. And then StarNet wanted me to move to San Diego. I didn't want to go to San Diego, so a friend of mine, Mike Goodman, who had worked at—he hadn't worked at the test site with me but he was working for Holmes and Narver, which was one of the engineering contractors for the test site.

So I went to work for Holmes and Narver. I was a microwave engineer for them. There was a few times—I did go back out to the test site once in a while. They were primarily based

out on Flamingo and Maryland Parkway. I made a few trips out to the test site, and the test site seemed a lot further. I rode the bus out a couple of times and I drove a car out there, and the bus seats seemed harder and it seemed farther than it ever was before. But I didn't have that much occasion to go out there. Then they started talking about Holmes and Narver moving their engineering department out to the test site. I would've done that, but I really didn't want to because then I was in my forties. I didn't want to go out there. Well, an engineering job opened up at the phone company, so I went back there and then I spent the next twenty-five, thirty years there and retired from there. Twenty years, I guess, and retired from there. But if the job had been in town and hadn't been so far, I would have stayed there because it was such interesting work.

So one of the main reasons that you decided to leave was because it was a commute.

That was the main reason. The commute. And also, I didn't know how long I wanted to stay in Las Vegas and so I thought, if I want to go to work for somebody else, where am I going to go? There's no test sites around the country. But if I went to work for the phone company, I could go to work for a phone company anywhere. And that was one of my reasons, but the main reason was the long commute.

You didn't stay up there at all?

Yes, I did. I lived up there when I was—I'm glad you mentioned that. When I was in my twenties, this must've been '64, I moved out there and lived in a little trailer out at Mercury for nine months. It was just a little green trailer that was a two-man trailer. Gary Schmidt [sp] is the gentleman that, a young guy, too, that I roomed with, and I met two others: Larry Richman and Norm Nahser. Norm Nahser, yes. He was a good friend. I was his best man, matter of fact. But we lived out there for nine months, and I don't think there was maybe two weekends that I spent

out there. Talk about boring, for somebody in their twenties, to spend a weekend out at the test site. There was nothing going there on Saturday and Sunday, and I would see, well, guys that were younger than me, than I am now, but I would think old men in their fifties, right? Walking around with a beer in their hand, nothing to do out there. I thought, I don't want this to be me twenty or thirty years from now, living out here, doing the same thing, and there's no life here.

But I lived out there for nine months. The trailer cost seventy-five cents a day to say in. Food was very cheap. They would change your linen every day. There was a movie theater. And I got to make some good friends out there that I worked with, that didn't work directly with me but worked for EG&G also. It was fun. It was good experience. But we would come into town and rent a couple motel rooms every weekend and spend the weekend in Las Vegas.

So like I say, I spent nine months out there. Then we decided, the four of us that ran around together, let's just move into Las Vegas and get an apartment. So we got a two-bedroom apartment and moved here into Las Vegas.

That was my stint out at the test site. It was a good experience but I wouldn't have wanted to do it for too long. I don't know why I stayed out there that long. I think I did it mainly because when I first came down here, Wayne Rose and I and a couple of other guys, Al Moeller was his name, and Nick Schell, those three—Wayne Rose, Al Moeller, Nick Schell, and myself—we rented a house here.

Where'd you guys live? What part of town?

We had a couple of homes, but most of them were close to **[00:40:00]** Charleston and Decatur, in that area. And one of them was getting married and another one was moving somewhere else, so we decided to let our lease go on the house, and I moved out there for nine months. Then moved into town, got an apartment. met my first wife there and got married.

So while you were working out at the test site, you weren't married?

I was married—well, no, when I first went out there, I wasn't married. I got married when I was—we got married in '64, '65.

OK. So you—

Yeah, I think a lot of the reasons that marriage—and I don't know if you want me to go into this or not, but it was just so many hours to be away from home; thirteen hours a day away from home and then weekends, too. Sometimes you'd be out there all night. I think it put a strain on the marriage. And I was too young anyway, but that's another story.

A lot of guys were married out there and I think it put a strain on a relationship, being so far away and so many hours away. You're gone from six a.m. to seven p.m. every day. You come home, you're tired, you eat, you go to bed and you get up and go to work the next morning. So it did put a strain on relationships, I'm sure.

But that's just about my story. I'm sticking to it. Do you have any other questions?

One thing that popped into my head when you were talking about suiting up to go in to check the equipment, did you ever think at all about radiation or exposure?

We always felt it was quite safe, because RADSAFE was always there and they checked our badges every month. You'd turn in your badge and everything, and there were areas where, as I said, there would be a wind row, which was where they'd pile things up alongside the road and it says, "Do not enter. Radioactive." Never did worry about it too much. I always felt like they knew what they were doing and they were looking out for us. And they seemed to be taking a lot of precautions. So no, I didn't worry about it too much. I don't think anybody did worry about it too much. Now, looking back, I think there were a lot of things they didn't know about. But I didn't work in an area where I would probably be endangered by the radiation too much. I didn't

feel like I was anyway. I guess when we would go in on recovery, there could have been radiation. The only time we suited up was on that one that I talked about. Most of the time we wouldn't even have to suit up because they would go in and check for radiation ahead of time, and then we would go in and go right back to work there again because it had either not cratered or had cratered and no radiation had been released.

One time we were going out and it was December the 17th of—I can't remember what year it was. Mid sixties. I was going on vacation probably two or three days from then. But the buses got out to Mercury and we went out beyond Mercury and we could see this plume of dirt blowing in the air. It was the Baneberry shot. They turned all the buses around and we came back to town. So I went on vacation.

So you weren't out there for Baneberry, but you were en route.

I was *en route*. It was set off early that morning. I was with LASL [Los Alamos Scientific Laboratory] primarily on the shots, and that was an LRL [Lawrence Radiation Laboratory] shot. But Los Alamos Scientific Laboratory is who I [worked with]—the shots that we did, we primarily worked on. So it wasn't one of our shots. But yeah, we saw it. We could see the big plume of dirt; we turned around and came back. And I said, `OK, I won't be going out there for a couple days.` I think I must've called my boss and went on vacation.

But no, we didn't worry about the radiation too much—badges and everything. When I worked at Rover, the one guy, Pete Craven was his name, and we would take the radiation source up to do the detectors, and they told us to hold it away from our bodies. But Pete would always put it up next to him and say, `I don't want to have any more kids`. Which was stupid. And then I heard that Pete had died a few years later and I says, `My gosh, what did he die of?` They said it was a heart attack, so I was quite relieved. It was a heart attack.

But no, I never did worry about it too much. I guess because I was younger and thought the government would take care of me.

Do you think about it in hindsight at all?

No. I think that I was not in an area where I would have to worry about the radioactive dust and things. I have had cancer, skin cancer, but that's from sun. As far as being sixty-three and being healthy, I don't worry about it too much. I don't think I was ever exposed to the radiation because I was never in a situation where—other than that one time up there, and then we were suited up. But I was never in a situation where I was really worried about it or in a situation where there might've been—. Now we did go, [it's] called boondocking, **[00:45:00]** I guess, sometimes, and we would climb through a lot of the old tanks and stuff that were out there that maybe we shouldn't have. That's the only time in my—one of the dangerous times that we probably did what we shouldn't do, go to some of those areas. So that's the time I could've been radiated, but radiation—it's the amount you get over time, per quarter, and I don't think that we ever got enough to hurt us over a period of time.

One thing we did like to do, there was a B-17 parked right on the north end of the dry lake bed up north of Area 3, a B-17 that had been used in the tests. It wasn't damaged too bad, but it had been sitting out there since the fifties, so it had been out there for probably ten, fifteen years. And we would go climb through it. It wasn't radioactive at all. It was on the right-hand [side] as we would leave the CP going north towards Area 3. One day we saw some people working on it, and we heard that they had sold it. Somebody had bought it and was going to sell it to the Forest Service in Arizona. And we watched as we would drive by there every day, they'd be down there working on it, replacing the engines or working on the engines. I didn't think it would ever fly again because we used to crawl through it there wasn't that much left of

it. Oh, I guess there was enough left to be interesting, but just having been set there so long the tires were clear down in the sand. It just looked like anything, they would've just scrapped it. But they flew it out of there. Watched it take off. And then I understand it was used by the Forest Service in Arizona for a period of time. Now it's called the Yucca Lady and I think it flies to air shows now. So I though that was quite an interesting experience, to have been a part of that and seen that.

When I was at Rover, [President John F.] Kennedy came out there, but unfortunately I didn't get to see him. I wish I could've seen him.

But there's a lot of interesting experiences out there. Had a good time. You don't realize you're learning as much as you do, but you are learning a lot about systems, how systems are going together and putting things together. And I think the bond between the people out there, too. I wasn't in the military. Like I say, I went to school, I had a choice, and then I got the job to come here to EG&G, so I just never did go in. Vietnam was going strong.

I was going to ask you about that.

I was in my twenties, I was going to join the Naval Reserves. I went to the Naval Reserve office here. Because I had gotten married, had a home, and I thought, well, I'll join the Naval Reserves. But they wouldn't take me because my feet were flat. So I thought, OK, they won't take me because my feet are flat. I don't have to worry about getting drafted either. Well, lo and behold, I got a letter in the mail, "Please report to Los Angeles for your physical." I thought, Golly, I didn't think I could get drafted because my feet were flat and I don't have to worry about anything. Meanwhile, I called my draft board and they said, `We'll get you a deferment.` And I wasn't antimilitary but I was established. I had no objection to going in the military, but I was established here and I thought, if I don't have to go, I really don't want to go. Looking back

in hindsight, I'm glad I didn't because I may not have come home. But I called my draft board and they says, Well, you got a deferment because you're working on defense, atomic testing. I said, OK, fine. Then I got to thinking, I wonder if I have to take my physical anyway. So I called and they said, Oh yeah, you have to go take it because you were ordered to go take your physical anyway, so if you don't go take it, you'll be in trouble. So I got on the bus here in Las Vegas and went down there with a bunch of other guys, and a guy named Warren Towle, I befriended him on the bus, and went down there, took my physical. They would've taken me in. I got 100 percent on my written test, which the draft board said, We're proud of you because you got 100 percent on that. But anyway, I passed my physical with flying colors, so I would've gone. One guy, he even had to point out that he had a toe missing. Two of them—we all had to stand around with no clothes on in a circle and they'd come around and look at everybody and he said, I've got a toe missing. They didn't even notice it because they were just taking people. If you could stand up and look straight, I think they were taking you in. They were just taking people in. Some of the guys would put a bar of soap under their arm so they would have a fever the next morning. That was one of the tricks they could use, things like that, to try to stay out of the draft.

The bus was interesting. We stopped in Barstow, I think it was—Baker or Barstow [California]—and had a bite to eat there on the bus with everybody. I remember when I got on the bus, they were all passing out cigarettes to everybody, which they wouldn't do now, I don't think. But we **[00:50:00]** got there and they counted the heads, counted us all on the bus. When we got back on the bus there were about four more guys on there than there should be. So we all had to show our paperwork, and there were four guys that just wanted to catch a ride to L.A. [Los Angeles]. We told them, You don't want to be on this bus. This is the wrong bus to be on.

I remember the hotel there, it was the Ambassador Hotel. I think it was, downtown L.A.? Roaches on the walls in the room that night. Worst food I'd ever eaten. I don't know if that was standard for military food, but it was the toughest, worst food I'd ever eaten. And I usually don't complain much about food.

We took our physicals and I came back. I had my deferment, so I knew I wasn't going in. But I often wonder of how many of them that were there with me taking the physical that time never came back. You know, you wonder.

Yeah, I bet. Were there a lot of guys that you were working with that got draft notices during that time?

No. A lot of them would return in later years. I was out there, as I said, for nine years, so a lot of them came back from Vietnam. I don't know of anyone that got drafted while I was working there. I don't know if they had deferments. A lot of them were ex-military. That's where they got their experience. Even though they were only twenty-five, twenty-six years old, they had served their time in the military and they got out, and that's where they'd received a lot of their electronic training. So I don't know of anybody that got their draft notice while I was out there. But I know there were some that, as I was there, that came back from Vietnam that wer, veterans that went to work out there.

It's interesting, it sounds like the juxtaposition between the way you guys were treated at the test site and the type of food you had and the pay you were getting versus *how you were[treated] under the privilege of the military.*

Oh. Yeah. It would've been different, I'm sure. Since I never did go into the military, I kind of compared it to that because of the work we did, the camaraderie we had amongst each other, the age we were. It was somewhat similar to that but no, the conditions were not at all like that. You

can't compare the two in that respect, no. But it was an interesting time. I didn't really know a lot about what was going on in the world. I wish I had, as far as knowing more of what's going on out there. I worked, I came home, you know, and I didn't really—

You were pretty consumed with it.

We were consumed with what we were doing. Yes. And there was a thing called "need to know," so they didn't tell you anything you didn't need to know. You wouldn't know whether the test was a safety shot—sometimes it was put a warhead down next to a nuclear bomb and see if the warhead would go off, just as a safety shot. Or they would test warheads, or they would test [a] new type of device and the bombs. So you didn't know what the particular test was because there wasn't a need for you to know, and the less you knew, the less you could say. You knew what your particular job was, and you didn't talk about it when you came back to town. You didn't talk about it to other people, what you did out there.

I have two questions, and the first is it sounds like you had Q-clearance?

Yes. I had a Q-clearance. Top secret clearance.

And the second one is when you were initially hired, did they talk to you at all about the type of work that you were going to be doing and the fact that you probably shouldn't or could not talk about it?

They did. They did when they hired us.

And that was part of your training?

Yes. It was interesting that my mother was a postmaster there in a small town. I grew up kind of in the country there in Idaho and it was just a little [town]—you could blink, you wouldn't see it, they always said, as you drove down the road. So my mother had the post office there. My dad had a gas station. When they were doing the background check on me for my Q-clearance, they

went to the post office and asked my mother—it was the FBI [Federal Bureau of Investigation], I guess, or somebody that says, We're checking up on a Wayne Violette. Do you know him? My mother said, Oh, that's my son. She was so proud. Anyway, they did do background checks. But you know what? I think one thing about hiring somebody that's twenty-one years old, it's a pretty easy background check. They mainly looked at things: Had you traveled overseas much? Did you have drug or alcohol problems? A lot of it was character. I think we all had a respect for that. Because I think back then, say, back in the fifties and sixties when you grew up, I wouldn't say we were more patriotic, but there was more of a patriotism. There was less questioning of the government. We hadn't had the Watergate, we hadn't had the assassinations, we hadn't had the distrust of government that there is a lot of now, and [that] there particularly was back in the late sixties, early seventies. So you pretty much didn't say anything. It was a duty, **[00:55:00]** You didn't talk about it to anybody, what you did. You could say, I'm an instrumentation technician and I do instrumentation on underground testing, because everybody knew that. As far as the details, I don't know that there were any details I knew that were what the Russians or the Soviet Union at the time would want. But whether there was or not, I just wouldn't talk about it. I think it was pretty much that way.

Was that difficult?

No, not at all. Never had any difficulty. Never had anybody question me or try to pry information out of me. I was lower level. I was one of the worker bees. But no, I don't recall that I ever had any problem with it, either. I'm sure some of the people in the higher-up positions, the physicists and those, had to be more careful. But they pretty much applied it to everyone that was out there. If you had a Q-clearance, you just didn't talk about what you did out there. It wasn't a problem, no. That and the radiation,—being worried about the radiation was no problem, either.

Did you have a sense of the magnitude of the type of work that you were doing or your involvement in the larger—?

The big picture of it?

The big picture, yes.

No, I didn't, and I'd say that was probably from youth. To me, it was a job, and I went out there every day and did my job. But now that they have the museum down here and I'm getting older and I look back, it was a part of history.

Oh, huge. Yes.

A big part of history, I'm glad now that I was a part of it, and I'm glad that I have memories of that. But at the time I don't think that—I had no idea of it. It was just another job. Maybe that was because when I grew up there in Idaho, they had the National Reactor Development Site out there where they were building the actual reactors and, to me, it was part of normal life. Because you grew up in the atomic age; when they would have the alarms and you would crawl under your desk. It was just a part of the age. The realization that it was special and the uniqueness of it, I didn't have. Now I look back and it was unique and I have wished that I had paid more attention to it. But I was interested in cars, girls, and things like that, so I didn't. But it was a unique time. As I look back at it, the memories of it, they are special memories and they do mean a lot more to me now. I took the tour of the test site here last September. I had been out there with Holmes and Narver, but that was twenty years ago was the last time I'd been out there. It was interesting to go out there and it brought a lot of memories back and now I appreciate more the uniqueness of it and what we did out there. I guess it doesn't seem that long ago, but I think about it now and I think about, you know, anybody that's in their twenties now, that was over by the time they were *born*, even. To me it seems like yesterday, though, because time seems to

shrink as you get older, but it seems like yesterday and I can drive out there now and things would be the same. But it was twenty-some years ago and it's distant history to a lot of the younger people, where it isn't to me. I think it's important that you're doing this because of that, because we will soon all be gone. Twenty years and 90 percent of us will be gone, probably.

Yes, and certainly that's part of the reason. It's a significant part of our history that we don't really know much about.

Yes, I'm getting more interested in it. As time goes on, now I'm getting more interested in it. And since I'm with the museum, it's keened my interest more. I've been reading more books on it and realizing, hey, this is then, and this happened then. The Cuban missile crisis was then. While I was out there during that nine years, Kennedy was assassinated, the Cuban missile crisis, a lot of things happened in that history as far as Kent State, a lot of the changes, the Charles Manson thing. Matter of fact, you don't realize how much history is happening, what's going on around you, until you're isolated for a while. When I was in Amchitka there in 1969, in the summer, that's when [Senator Edward M.] Kennedy ran off [the bridge] and the girl drowned at Chappaquiddick. The Charles Manson—Sharon Tate killings were right about that time, too. Those were two big things that happened that I was isolated from because I was up there. And my grandfather died, too, when I was up there. You don't realize how much happens in two or three months because you're taking it in a little bit at a time and you're able to assimilate it, absorb it. But when you're cut out from the news for two or three months, *then* you realize what happens in that short period of time. And that happened while I was up there and I thought, Wow. And then the *Manhattan*, I think, was a ship that went around through the north passage at the same time for—Northwest Passage, it was an oil ship. So a lot of things **[01:00:00]** happened

while I was up there. But I think normal things happened [too], it just seemed like since I was away from it all, everything happened while I was there. Does that make sense to you?

You bring up an interesting point which makes me curious about the time. That time period seems like there was a lot that went on culturally in our history, and politically.

And I didn't realize that at the time, either. So much was going on. Martin Luther King was assassinated just during that time. The sixties.

Right. And you were fairly young. You were of—

You know, I never—

The age. I'm just wondering, did you feel isolation?

Well—

Because a lot of your, I guess you might call them "peers," but a lot of folks your age were involved in—

Let me give you a little bit of background. When I was going to school in Idaho, I came here in '62, and so that must've been '61. Back then, the Kingston Trio, in the late fifties, everybody was pretty clean cut, crew cuts and things. There was a fellow that went to the university there in Idaho. He was out of the military, he had on his military long jacket, he had his long beard and his long hair, and he came to the university. They were having a rally there and it was like a protest rally for something. I was standing in the back of the crowd with him and he said to me, `What you're seeing here is the beginning of this history.` He knew that that was the beginning of the protests from the colleges. That was the first one that I'd seen. And he was always kind of an oddball on the campus because everybody, I can't remember his name now. But you know he was the hippie from California that came to Idaho, and almost started the

rebellion there. And he said, You're seeing history being made here. He knew what was going to be happening.

Now I grew up in the time of Elvis Presley and the Beach Boys, things like that. A lot of innocence. During the sixties is when the hippie generation hit. Haight Ashbury. Matter of fact, we drove down through there one time right after I got married, and we saw the girls sitting out on the lawn there with the "X"s on their foreheads and their heads shaved and things.

But anyway, I worked at the test site, the guys were my age, I got married. I never really was part of the hippie culture at all because I had settled down by then. So I like to say I was Elvis but I was pre-Beatles. That really dates me now. My first wife, she got into that a little bit. She had her body painted and was doing something at the convention center one time, the body paints and stuff like that. But I never really was part of the hippie culture, and I guess it was because just the people I ran around with were technicians and professionals, and I just never became part of that. I was aware it was going on, and the styles were that, the colors in the homes were that, all the bright colors, the shag carpet, all of that went on around me. I'd go to some parties and it was the sixties, definitely. But as far as the cultural revolution during that time, I was married, I was working. Been married, I got divorced, got remarried. My life was going on. I was working out there. If I'd been five or six years younger, I may have been, or been in a different occupation. If I'd have worked in one of the hotels or something, I may have been. But where I was working, it somewhat isolated you from that. I just never became a part of it. Never got into drugs at all. Drank beers and stuff, and a lot of parties. But [I] never got into the drug culture, thank goodness.

It just seems they're two very different worlds; one of the test site and of this [counter culture] stuff.

Oh. Yeah. It probably was. I guess I never did know of the other world. I never did.

You were definitely a part of it, though.

Right. The first exposure I ever had to the drug problem—do you want me to go into this at all? This is not test site. This is when I was going to school up there in Pocatello. One guy came in and he would be on drugs at night, screaming and everything. That was my first exposure to what's wrong with him, you know, drugs. It was a big part of the sixties, but I never was a part of it.

It's interesting.

Thank goodness. I mean I was aware it was going on, the styles. I wore the bell bottom pants and the bright shirts, and my hair was down over my ears a little bit. Look at my old pictures. That was the style then, but [I never] really got into it like a lot of people did.

[01:04:41] End Track 2, Disc 1.

[End of interview]

[00:00:00] Begin Track 2, Disc 2. [Interview resumed February 3, 2005]

Picking up where we left off— and again, thank you for meeting.

Oh, you're welcome. I'm glad to do this.

I think we left off talking about the general time that you were out at the test site.

I remember we had done a shot out there. We had been up probably most of the night doing a shot and had and set it off early that morning, and then we came back into town in Las Vegas. We went to a place [of a man] called K.L. Cox. He worked with us out there. We called him "Chief," but he was one of the technicians that worked out there, too, and I think it was with—probably Norm Nahser was with me, and we came into his place. He had a home here and we were renting an apartment, I believe. But we had worked all night, we were at his house having a

cold beer and just kind of visiting, and the neighbor lady came over and said, The president's been assassinated. So we turned on the TV and watched that. I had bought a brand new '64 Chevelle, Chevy, and later that day I had to take it in to the Chevy dealer to get it worked on for something. It was a real solemn day. I can remember that everybody was very quiet that day. The news was coming in, that they had found Lee Harvey Oswald and that Kennedy had been shot and he had died. That's a day that sticks in your mind for the rest of your life. And I can remember that day, though, that we had had a test out there. Set it up that night and early that morning had the test, and then came into town. So that's part of the history of that time, too.

Then I remember Robert Kennedy, when he was killed. We had just got off. I heard it when I got off the plane. We flew the DC-3s out of McCarran [International Airport] here, we were flying those old DC-3s which were a very safe plane, I understand. We would fly out there and we'd just landed at the Pahute airstrip and somebody had told us that Robert F. Kennedy had been shot. Those planes we'd fly out there, we would fly from McCarran. That's when we worked further out.

That's not a long flight, I would imagine.

No, half-hour or so. We would go further out. But then it was a longer drive, I think, by the time we would get to the airstrip and get in our vehicle and drive up to where the actual shot was. It was probably longer that way. Sometimes we would take sandwiches, you get these sub sandwiches or something, you'd buy them in the grocery store and they were all wrapped in tin foil. We'd throw them on the manifold, then by the time we'd get up there in the morning, we'd have our coffee ready and we'd eat one of those because they'd be all brown and hot by then. We'd just heat them right on the vehicle manifold, put them on there, drive up there.

One time we were going to take off from there. We taxied to the end of the runway and got ready to take off, and then all of a sudden [the plane] stopped. [I] looked out, and the little things were still on the wings to keep the flaps from going up and down. They'd forgot to take them off. So I always wondered how safe the flight was back and forth, but I guess the old DC-3s—they're workhorses and they're pretty safe planes, but they had metal floors and they were quite cold in the winter when we'd fly up there. But that was fun, too.

I bet. Kind of loud?

I recall them being quite loud inside the old DC-3s. They were built in the forties, I think. But that was fun. Like I said, a lot of experiences up there. It wasn't a boring job at all. It was just always interesting, doing something else. It wasn't like—I had a job at the phone company, as an engineer. I'd sit at a desk all day, look at a computer screen and do things. It was much more fun up there. I would have stayed there forever—

The commute.

Yes

I bet sitting there at the desk just thinking, boy, different than what you used to be doing.

Yes. I don't think I'd have wanted to do it for a *lot* of years because it's just the time spent. I calculated one time, and the miles that I put in going back and forth to the test site for those nine years was the distance from here to the moon. It was a lot of miles and a lot of hours of your life spent just sitting there for four hours a day, sitting on a bus. I didn't want to do that for the next thirty years. So that's one of the main reasons. I did read. Well, I either slept, leaving so early and then getting back that late, it was good to be able to sleep on the bus going out. Sometimes you would wake up at Mercury and the guard would come through and he'd tap your badge, he'd look at the badges and tap your badge, you'd barely wake up and look and say, `Oh, we're at`

Mercury. Then you'd fall back asleep, and then we'd pull into the CP and you'd wake up again, go in and have your coffee. I don't know if they called that coffee or not. That was the worst stuff I ever drank, was at CP. You drank it because it was there but man, I've never tasted any coffee before **[00:05:00]** or since then that was as bad as that coffee in the CP. Sometimes you'd wake up on the bus, it'd be dark; you'd wake up and you'd think, am I going to work or coming home? Sometimes you would sleep there at the CP, too. Then they had a place called the Monastery, you could sleep up there. The coldest night I ever spent in my life was on one of the top bunks there. I just about froze all night. But back in the control point there, they had a place right off the cafeteria that you could go in and sleep. And it was pitch black in there all the time. You'd go back in there, and I don't know when they ever turned the lights on but I thought, Man, a guy could go back in there and die and lay there for two or three days before anybody would find him. It was always good sleeping there. It was just so quiet and so dark back in there.

I've got to tell you an experience. You want experiences? It was wintertime and they had some trailers set up to sleep in down by where News Nob was, just off of the CP, just to the south of the CP, off to the right-hand side of the road just to the north of the CP. There were several of us sleeping in there. I remember one guy snored so loud, we all started complaining to him. But one guy went outside. There were some outhouses outside, and it was wintertime. He was just in his shorts, but he ran outside real quick to go to the restroom, use the outhouse out there. Well, we locked the door on him. So there it was, close to midnight, and he was out there, and it was cold and he was wanting back in. We told him we weren't going to let him back in. So he says, You guys aren't going to sleep as long as I'm out here. So he climbed up on top of the trailer, and here it was midnight, he was jumping up and down on top of the trailer, making noise so we couldn't sleep, and here comes the sheriff driving by. There's a guy in his

shorts, it's freezing weather, standing out in front of the trailer at midnight, jumping up and down on top of the trailer. So that was kind of a funny experience, too, to explain that.

But we had a lot of good times. Being out there, you had to do some things to keep busy and to occupy yourselves. Being young, there was always something going on, something interesting, and we did some things that probably you shouldn't do out there. Somebody would go in the outhouse and you could tape them up and take the truck and push it around. While he was taped up inside there, he couldn't get out. And one time I was sitting in there and somebody threw a piece of metal rebar, and the walls are fairly thin on them, and I remember the rebar went right through one wall and right out the other. And I was sitting there and I heard a big *th-thump!* I thought, man, that could've killed me. But just experiences—

Explain that one.

Yeah. But there was some good times. Nobody ever really got hurt bad. One time we were coming back from Area 12 and we had a carryall. One guy was driving, the other guy was in the passenger seat, and there were three of us standing up on the back tailgate and going out across the desert. Well, when it came off the desert and hit the road, it was a gravel road, it flipped. The guy on the right side of the vehicle, he rolled out through the desert. I was in the middle. I just dropped off the back and skidded down the road and tore my shirt all up and scratched my back.

Did the truck flip?

It didn't flip over. It just flipped us all off the tailgate. And the other guy that was on the left side, he got flipped up in the air and landed on his back. It knocked him cold. We went running back to him and pretty soon he came to.

But just experiences like that. Nobody got hurt bad, but it was just kind of an adventurous time and there were a lot of things we did. We set our own testing off one time. We had a

moratorium up there, so we did our own atomic testing with pipe bombs and set them off outside the thing.

But they had to keep the workforce there because if you let everybody go and then wanted to start testing again, well, all that experience would be gone. So they kept us on the payroll. There was a couple of months there that we had hardly [anything] to do. And idle minds, what does it say, idle hands are the hands of the devil? So we would keep ourselves busy but nobody ever got in trouble. We didn't do anything really bad. We just kept busy.

Sounds like there was quite a bit of camaraderie.

There really was. You pretty much knew everybody and knew what was going on in their personal lives. I think it was a bond that, just because you were way out there and you were doing the same work. It was not being in the military, but it was probably similar. If somebody had a weak spot, something they were sensitive about, and you found out about it, you would attack them on that spot. So I think it was a good growing experience because if you did have a weak spot, you'd get over it soon. One guy had a name he didn't like. Well, that's what he was called from then on, so he got over it. Maybe that's just about youth, but it was a real growing experience for me as far as learning about life and toughening up a little bit. But you do build a camaraderie **[00:10:00]** with those people that even though we weren't in combat and [our] lives in danger. I can imagine after being out there and the relationships we built up and the camaraderie, how close it would be with combat people as far as a life and death situation. I imagine that's a bond there that you could never duplicate, and so it would be an experience. But yeah, we did. I think it was just being young. We would do things together on weekends. We would party together, drink together, go waterskiing and boating together. One of the guys—I remember we went out one time. I had a boat, so we drove up, and he was a pilot, he was getting

his pilot's license, and he would do aerobatics. So one time we went up to [Mount] Charleston and we went snowboarding up there. It wasn't snowboarding, it was like tubing back then. Went up to Charleston. We came back and we got out his plane and we did a bunch of aerobatics. And then we got in my boat and went out to the lake and went waterskiing that afternoon.

Well-rounded day.

What a day that was. Here we were from the mountains up there sliding in the snow, to flying in the plane doing all these Immelmans [turns] and loops, and then going out waterskiing. So that was quite an adventurous day. It was one of the things you could do here. I don't know if you want to get into life's philosophies or not here, but when you're younger, you build up a closer camaraderie with people than when you get older. When you get older, your relationship becomes your family. You have kids then, and your family and your wife; when you're younger and especially when you're younger and single, you build up—those are like your friends at work and off work. When one of them wants to move, everybody goes in and helps them move. And you're young enough, you can do it then. Now I don't offer to help anybody move or ask anybody because I don't want to help them. But yeah, it was a good experience. It was a wealth of good experiences up there.

So you got out here in Las Vegas when it was still pretty small and the growth thing—

Yes, I came in here July of '62.

What was it like then?

Well, we got here in the middle of the night, Wayne Rose and I did. It was warm, because July it stays hot. Next morning I got up and it kept getting hotter and hotter and hotter, and I swore I'll never stay here. This is just too hot. I grew up in Idaho and it would get warm there in the

summer, but it would cool down in the evenings. But I swore I'd never stay, and that's forty-three years ago now. Grandkids here.

But Las Vegas, to me it was a big town because I came out of the country. Pocatello wasn't very big, maybe fifty thousand. Las Vegas was probably a hundred and thirty thousand then, something like that. So to me it was a big town. And I was rather naïve coming here. I had a lot of things to learn about buying a car from salesmen and things like that, it wasn't as honest. People up there [Idaho], everybody seemed to be a little more friendly and honest, and coming to the big city, especially Las Vegas being the way it was, you kind of hardened a little bit. You get a little bit more wary of people and you're less trustful, which is a protective thing. It was a change for me.

But we came into town and the gas company was downtown, the power company was right downtown, the telephone company was right downtown, everything was right downtown around Fremont and Main Street. That was *the* town. The Strip was—I got some old pictures of the Strip with the Dunes, the old Dunes Hotel, and the Hacienda was way out there then. To me, it seemed like a big town, but it wasn't by any means. It had a racetrack for racing horses there. They had a drive-in movie behind the Stardust Hotel, which was getting more and more difficult to see at night because the lights were getting brighter on the Strip. You'd drive out on Charleston and drive out toward Henderson and it was just vacant land all out there. I had a motorcycle. One of the guys from the test site, we would both go riding on it. I rode it out to Rainbow from where I lived down there, Charleston and Decatur, and the chain broke. I had to push it back and I had to push it back through the desert for a long ways in the heat of the summer. But Rainbow was away out of town then. We used to go to the races out on Rainbow Boulevard. They had a racetrack out there. Actually where Rainbow is was part of the racetrack.

You could sit there and watch the races and look across the desert to Las Vegas away to the east of you.

So there have been a lot of changes. Used to catch that bus down on Industrial Road, around 1414 Industrial, in that area. All the buses, we would catch them there at first and ride out to the site. Then they started running routes in town to where you could catch the bus fairly close to where you lived. I was unfortunate. After I got married, I always lived, for the most of the years, on the east side of town. I always had to take the bus **[00:15:00]** all the way through town, and didn't have the freeway then to get on, so it took quite a bit of time just to get through Las Vegas. It was quite a time.

When you got out there and you actually saw the test site, what were your impressions?

Desolate. Long ways away from town. Tumbleweeds and wind. But after we got out there, got to working, got to know the people and got interested in the work, it didn't seem that way. I recount that because being out there was exciting. Knowing the people, even living out there, you were involved with the work, you were involved with thinking that was part of your life out there. Going back out later on a tour, it looked so desolate. I thought, how could I have enjoyed life out here? But you know, there was always something going on. Like at lunchtime, we would be working in Area 3, we would run up to the chow hall in Area 12 and eat. Or if we stayed over, we would send somebody for hamburgers and they'd go up and get a bunch of hamburgers and bring them down and we'd sit around and eat hamburgers. So there was always stuff going on and the social aspect of it out there was to where you didn't feel like you were out in the middle of nowhere. I often wondered later, you never hardly looked around at the mountains and what it was like because you were just busy working. Then when I went out there on the tour, I looked around and I thought, I can see why I didn't, because they were pretty nondescript all around

there. The mountains were low-lying, so they were pretty nondescript mountains. I remember being out there in the evenings, though, and the sun would set and how peaceful and quiet—how much more you could see the stars out there because you didn't have the lights from the city. [It] would snow out there, too, up Pahute Mesa and Rainier Mesa, so we'd have snow tires on the vehicle. I don't think it was hot. I never minded the heat. I never really realized it would be hot up there, and I don't think it was in the summer, as hot as it was here in town. It's quite a bit higher.

Especially depending where you are on the site.

Yeah. But my first impressions were it was a long ways from town and it was pretty desolate.

But no, I never minded. It was a long ways and it was a lot of hours, but I never minded the ride out there. Like I say, I slept and I would usually read on the way back, so it didn't seem too bad. except when—everybody goes through the highs and the lows in their life. When I would be going through like a depression or a low in my life, it seemed like a long ride back sometimes. But usually you kept busy by reading or something like that.

I think a majority of this happened after you'd already left, but at some point there came to be a lot of protests out at the test site—

That was after I left, yeah.

—about the whole nuclear program and weapons testing.

I think we saw a few when I worked out there, but most of that was afterwards.

What are your thoughts about that?

I don't know that—I'll give you my thoughts on it. Maybe it's because of my paradigm, where I'm from. But my thoughts are I feel bad for the people who were downwind because I think there were a lot of things done that probably were dangerous to people. But I think at the time it

was necessary because the bomb ended of the Second World War. I'm not an expert, I feel bad for all the people that died in Nagasaki and Hiroshima, but by the same token, the Japanese would fight to the death. They proved that on some of the islands in the Aleutians. I think that if we had to attack the mainland of Japan, the civilian deaths—and in a war you're looking out for your own people, your own soldiers, the American deaths, as well as the Japanese soldiers. They were conditioned to fight to the death for the empire. So I think that if we'd have had to go in and attack the mainland of Japan, and as cruel and the Japanese were—because I've read about the Rape of Nanking when the Japanese went into China—how cruel those soldiers were and how they were almost bred from the time they were born to die for their country. And they were mean. I think dropping the bomb on them, it ended the war, it saved a lot of lives. I feel bad that it had to go to that, but by dropping the bomb, it showed them what we could do and it showed the whole world what we could do. Since then, the world has been more conscientious. They haven't used the atomic bomb because they realize, especially with the hydrogen bomb, how devastating it can be.

But as far as protesters go, they have a right to protest. I think they ought to study first. I think a lot of the protesters are young people who get caught up in the moment of it and they **[00:20:00]** don't really know. They think, oh, that's great, let's go protest. They have a right to, but I think they also have a responsibility to learn about it.

My feelings on nuclear energy. There's only been three people killed in nuclear energy, and that was the three people at the SL-1 reactor site in 1961, January of '61. There were three people killed in the SL-1 reactor in Idaho Falls. But I think nuclear power is relatively safe if they control it. They talk about the Three Mile Island disaster. It wasn't a disaster. Nobody died from it. The disaster was Chernobyl in Russia, which they didn't have nearly the safeguards we

do. My personal feeling is nuclear waste, right now it's being stored all over. It's more vulnerable to terrorism. It's right next to rivers and lakes where it could be spilled into there. They ought to store it somewhere and I think the test site is the best place to store it, having been up there. I feel like we ought to look into nuclear power. Jimmy Carter back in the seventies stopped breeder reactors because the byproduct might be stolen by other countries. I think we ought to do breeder reactors to where we can reuse the fuel, get more independent from foreign oil, foreign energy. Use the technology we have. But a lot of people, it's been set in their minds from somewhere to be so afraid of nuclear energy, nuclear power, because of the bomb. They don't understand it. It's a political thing, too. And that's my feeling, that we're going to have to rely on nuclear power and safe nuclear power. It is a dangerous thing. It is going to have to be very well [managed]—safety regulations put into place and everything. But to me, store it out at the test site, use breeder reactors to use it all up, and use more nuclear energy to get us less dependent upon foreign oil. And that's nutshell, but that's how I feel.

And I think there are a lot of people that feel the same way.

I think that the reason they don't want to store it out there is because it's politically correct. Everybody, the people, the politicians in Nevada, will say, `No, don't put it there, protect our state.` To go against that now is almost political death.

What about the folks that argue, OK, maybe so, but is it necessary to have a weapons program, or was it necessary to have a weapons program?

I think it was necessary because at the time of the Cold War, Russia was building weapons and we were building weapons, and I think we needed to test our weapons because I think they tested one and they found out that it was not safe or something. I think it was necessary to test the weapons we had and to develop weapons that are cleaner. Now I think—I wish that the atomic

bomb had never been invented. I wish it wasn't possible. But now that it's there, it's there, and you've got to face the facts of it. I think that it's good that we have the controls on it and it's good that nobody is using it, but it is a definite danger and it is a definite fear. Like for North Korea, they want to have their nuclear power plants because one of the byproducts they can use from the nuclear power plants is to build bombs. That's why they want to control it. If they get the byproduct from it, I believe that's plutonium and the U235 they can use to build the bombs. I don't know that much about it, being a technician out there and not being a physicist. But I think it's going to have to be controlled very carefully, though, because it is dangerous, especially the hydrogen bomb. It's so much more powerful, a hundred megaton bomb. So I wish we could have nuclear power without the bomb, but it's been done; they developed it and now we've got to deal with it.

As far as atomic testing goes, I don't think there should be atomic testing. I think that unless somebody else is testing, we've got a deterrent. What do they call it? I forget the name of it now, the Russians used, but anyway—a deterrent. If we have to, we will because I think we have to be the strongest country, but by the same token, I hope we don't have to. I don't know how they test weapons now to see if they've degraded or the weapons will be no good. But there's no winners in a nuclear war.

One of the things, too, I've read on this somewhat and I don't know if you want to go into this, we're a fairly urban country. We've got big cities. When we were in the Cold War with the Soviet Union—the Soviet Union is spread out to a lot of rural areas. So in a nuclear war with the Soviet Union or Russia, we would lose our population in our big cities, where they would lose a few but they would still have their major population because they're so rural. There [are] a lot of things to think about.

It's a huge area, too.

Exactly. But I went through that when I was younger and you kind of grew up with the fear of nuclear war. They were building bomb shelters at the time and everything. **[00:25:00]** Thank goodness we don't worry about it so much anymore. The big worry now is dirty bombs, just spreading the radiation from them. That's not a nuclear bomb. It's just a radiation pollution bomb.

But I think there's a lot of fear of nuclear power. I don't profess to be an expert and I don't profess to know everything. There are probably a lot of people that are a lot smarter than I am that are *against* nuclear power plants and the waste storage. But from where I see it, I think it's an energy source that cannot be overlooked and that we're going to need in the future. And we do have that. France uses breeder reactors. I don't know how many nuclear reactors they have for generating their power, but other countries are doing it, and I think we need to do it more here. That's my feeling. Fossil fuel is a finite source and it's going to run out. We're going to have to find either geothermal power, wind power, solar power, or nuclear power.

Definitely need alternative sources.

Exactly. It's going to run out and the price is going to go up and up and up. Anyway, that's my outlook on it.

It's interesting. Well again, I certainly appreciate you taking the time to do this.

You're welcome. My pleasure. Sometimes I think as we drift on into the mists of history, we're all forgotten. It might be something that is preserved for the ages. So you're only one generation away from being completely forgotten, and I hope that you add something to the future.

And this is a good way to do it, so thank you.

Oh, you're welcome. It's my pleasure.

I guess just any other thoughts that come to your mind, maybe some things we didn't cover?

No, I don't think so. Just that I grew up in the nuclear age, and I'm glad we're where we are now rather than a different place. I'm glad that the Cold War is over. I'm glad that the Soviet Union fell. When you're younger, you think, someday there'll be peace in the world. Someday there will be. But as you get older, you realize that that's never going to be. I hoped there would be, but there won't be. So you've just got to go with it and appreciate what you've got. I guess I'm more of a philosopher now. But as far as the test site, I can't think of anything that I've missed. Like I say, it was one of the best times in my life. I'm glad I did it and I hope that we are able to contribute somewhat. At the time, you're working and you don't realize *what* you're contributing, but I hope we were able to contribute somewhat with the work we did.

Well, to an enormous part of history, for one thing.

Yes, that's why I enjoy working at the museum so much.

A significant part of history. Yes.

It is a part of history and I'm glad I was part of it.

[00:28:02] End Track 2, Disc 2.

[End of interview]