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

Interview with Nick Aquilina

April 6, 2004
Las Vegas, Nevada

Interview Conducted By
Joan Leavitt

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Produced by:

The Nevada Test Site Oral History Project
Departments of History and Sociology
University of Nevada, Las Vegas, 89154-5020

Director and Editor
Mary Palevsky

Principal Investigators
Robert Futrell, Dept. of Sociology
Andrew Kirk, Dept. of History

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

Joan Leavitt*: I would just kind of like to lead up to 1987. I understand that you came to the test site in 1962 and you worked with Reynolds Electrical and Engineering Company [REECo]. Some of this information I got from your video, so if I wrote it down wrong this is a great time to get those kinds of things corrected. Now it looks like you worked under Ray Emans and that was under NTS support, is that right?*

Nick Aquilina: The Atomic Energy Commission's Nevada Test Site support office at the Nevada Test Site.

OK. Now that was at the test site. It wasn't in Las Vegas.

That's right. Mr. Emans was the director of that office.

OK. And then you had mentioned about working in town as a plans and budget director at the AEC?

That's correct. I came into town in 1973, 1974, in that era and became the director of plans and budget.

OK, good. And then it seemed like you had mentioned [Mahlon] Ink Gates. You told some delightful stories.

Ink became our manager in 1971, the Atomic Energy Commission's, then the Department of Energy's, manager of the office, and I worked under him as the director of plans and budget.

OK. And then you said he was kind of a mentor.

Oh, he's a wonderful man. He was a retired general, and just something special about the man as a leader. He understood the need to be a leader first and a manager second.

You had said that you had kind of patterned some of your style after him.

Well, I tried to. That's impossible to do but you try to pattern the way you manage and the way **[00:05:00]** you treat people off people like him, after people like him, so I always considered him as one of my many mentors in this business. He certainly was right at the top.

That's good. The next date that I noticed in your career was that you went to Idaho Falls with Charlie Williams to be a deputy manager to Troy Wade.

No, Charlie Williams who was the deputy manager here under Ink Gates went to Idaho to be the manager of the Idaho National Engineering Laboratory which is located outside Idaho Falls, Idaho, similar to the test site here. Reactor safety was the principal responsibility up there. And I went with Charlie as his assistant manager for administration. I later became his deputy manager. And then Troy Wade replaced Charlie as the manager in 1983, so I was Troy's deputy until 1987.

OK. OK, good, you're clarifying up, you know, some of these details. I appreciate that. And it looks like before you came and took over as manager at the test site—now you used the term NVO—?

NVOO, which is Nevada Operations Office. NVOO was the AEC's short term for the Nevada Operations Office. All the DOE sites around the country had that symbol, if you will. ALOO was the Albuquerque office, Nevada was NVOO, RLO is the Richland [Washington] office, Oak Ridge [Tennessee], *et cetera*.

That caught my ear.

Right, NVOO.

And so you came to be manager July 1, 1987.

That's correct.

Now during that time there were some Geneva negotiations going on, and can you tell what you knew about those negotiations?

We knew very little, which was very interesting, because those activities were going on. They started under Ronald Reagan as part of some of the START [Strategic Arms Reduction Treaty] treaties and some of the other treaties under President Reagan. But in our world, we really didn't know or expect that the then-Soviets would be coming to Nevada and we would be going to their test site. The first time I heard it was very early in 1988 when Troy Wade, who was then the acting assistant secretary for defense programs for the Department of Energy, called me. And Troy and I had known each other for many years obviously, but when Troy called me he says, `We're going to have some Soviet political and technical people coming to this test site for a familiarization tour of the site.` And then he gave me my instructions of what to do and expect on this particular visit. So that was the first time I had really come to the realization that we might be hosting Soviets at our test site.

That must have stirred some really interesting feelings in you.

Well, quite a shock because we were in the midst of the Cold War and, you know, this was the Ronald Reagan era when Ronald Reagan talked about defeating the Soviet Union and the Cold War was at its height, so it was quite a shock to us that here we might be hosting Soviets. And in fact on this familiarization tour we would in fact be hosting them. Some very senior people from the Soviet Union came over here. And it was a cold January day; it was Super Bowl weekend of January 1988 that they came here. I recall it was Super Bowl weekend because we had to get them a one-night hotel stay before they went to the test site in Las Vegas, and as you may know Super Bowl weekend is a big week in this town. The hotels are jammed and if you're not at the

Super Bowl you're in Las Vegas. We went down to the Golden Nugget and tried to negotiate some rooms. The people at the Golden Nugget who were very nice and cooperative made it clear to us that this was an awful big week for them and for them to provide **[00:10:00]** us a $55.00 room and to tie up an entire floor of the Golden Nugget was really pressing. But they in fact did give us that Monday night, I believe it was, of that week prior to the Super Bowl. And we had, it must've been thirty to forty Soviets, plus all the American contingent that came from back in Washington, staying at the Golden Nugget. Then the following day we did some tours in town and then we took them out to the test site.

Now that was quite a long week from January 24 to January 30. That was a lot of time to be, I guess, showing them— What exactly did you—?

Well, they were trying to establish how would this joint experiments be done at our site and their site, so they were just looking at protocols and procedures. Where would they stay at the test site? What would be available to them? What kind of equipment would be available to them? What kind of eating facilities, you know, recreational facilities, whatever. It truly was a familiarization trip and one to start talking about how would we perform these activities. The negotiations were going on in Geneva between the two countries, but some of the details of those protocols needed to be resolved and established. Things like how many people, and I believe it turned out that on any given moment there could be forty-five Soviet party people here, and when we went there it was the same thing, and you could change out the number of people, or the kinds of people, but the maximum you could have in any given time was forty-five. There was a lot of discussion on how would you send over the list of potential people who'd come over so that each country would have the opportunity to veto somebody. That didn't happen very much but just the ability and the authority to cross off, if you will, from the potential list, because

we would submit a list of a few hundred that may be over there in the next seven, eight months, and they did the same thing here. So the visit to the site was exactly that: to get familiar. Where would their working areas be? What would they be allowed? How could they protect their stuff? You know, what kind of security would we have for them? So it was that kind of a thing.

Now both you and Troy Wade mentioned that there had been, I think you would call it, measuring devices—well anyway, let me use the term "remote sensing laboratory devices" which had measured each other's explosions?

Well, the whole purpose of the Joint Verification Experiment, to put it in simple terms, was to verify the treaty. The treaty that was proposed in 1974 and came into effect on April 1, 1976 was to limit the size of the devices to be tested to a 150 kilotons. Prior to that the treaty was that you could test underground, but there was nothing said about how big of an experiment you could conduct. So the purpose of the Threshold Test Ban Treaty of 1974 that came into effect in the spring of 1976 put a limit on that, 150 kilotons. The Senate never approved that treaty. We followed it but it was not a formal treaty because, as you know, in our nation when you have a treaty you have to have Senate approval of your treaty. The reason the [U.S.] Senate would not approve it, there was no verification process, you know, it was trust but verify kind of issues. So the purpose of the Joint Verification Experiment was to have a methodology that you could verify that they in fact were living up to the treaty requirements. So again the purpose was, how do you validate that, how do you verify that, without being intrusive to the experiment? Experiments are very expensive. A lot of classified stuff goes on in the explosion. So there had to be a method that you could verify. There's many ways you can do it. Seismic is one way. But **[00:15:00]** seismic, you had to have an awful lot of seismic gear in very close to get an accurate reading, because geology will influence how the ground reacts to a seismic condition, just like an

earthquake. So that wasn't a desired effect. And the United States came up principally at Los Alamos laboratory with a method that was called CORRTEX [Continuous Reflectrometry for Radius versus Time Experiment]. What it really did, and to put it in simple terms: if you have a short in your telephone lines to your house, a telephone worker will come out and he will send a signal down the line. When it hits a short it bounces back and he's able to measure the time it took to bounce back. And through a mathematical formula he can tell where that short is, the length from where he sent the signal until the short and then it comes back and it's recorded in a device. Well, CORRTEX is very similar. What you're doing there is at some distance from their ground zero where they're going to have their experiment, thirty-one meters to be exact, you put cables down, and those cables come out to a recording trailer that you saw in the picture, and when the experiment goes off underground and starts crushing that cable, just through the blast effects, you're able to measure the speed of the shorts—

So the cable is related to CORRTEX.

That's correct, and through a lot of experiments and a lot of discovery and inventions that Los Alamos did, we're able to measure the yield of the shot probably plus or minus five to ten percent. So it was a very acceptable way of measuring the experiment, plus since you were thirty-one meters away with your stuff, your cables, you were not being intrusive in their experiment. All you would have to do is drill a hole parallel to their hole, same depth, and put your cables down thirty-one meters away. You didn't have to have anything to do with their particular hole. So that's what CORRTEX was. And the Soviets had developed a very similar—they didn't call it CORRTEX but whatever they called it, it was very similar in concept to what we did.

So that's what was the purpose of the JVE. And so they came to the Nevada Test Site on August 17, 1988 [and] conducted on our Kearsarge event a similar experiment. We went to their site and on September 14, 1988 we conducted our CORRTEX experiment. Both nations claimed victory, if you will, that they were able to verify the yield of the shot. And as a result of that, a year or two later the [U.S.] Senate in fact approved that treaty and it became a treaty between the United States and the Soviet Union.

Thank you. You've given kind of an overall summary leading up to Kearsarge, and I know that it was not only important to be opening it up to the Soviets, but it also required a great deal of organization and logistics because of the media attention that came.

Quite a bit. There was quite a bit of media interest. I thought not as much as there should've been, because I really felt that this was a significant historical event in bringing two enemies together with a common goal and perhaps was symbolic of ending the Cold War. Because here you're bringing nuclear scientists into our country and then we're sending nuclear scientists into theirs, and these people were talking, enjoying each other's company often, and so it was a very significant, I thought, step in ending the Cold War. And there was some media interest, but not as much as I thought there should've been and could've been. I don't think people really **[00:20:00]** understood what the impact of this was. You know, the Cold War definition is different to everybody. What was the Cold War? When did it start? When did it end? But regardless of your own definitions, surely the nuclear deterrence of both countries and the nuclear power of both countries was a very significant part of the Cold War, and to bring the two nations together with another treaty, a treaty that eventually led to cessation of testing—that wasn't the purpose of it but we got there a couple years later, as you know. The last test we did at the site here was in September of 1992, the Divider event, so here you're talking less than, what,

almost exactly four years later, that was the last test that we did. So I think all of this kind of came together, so yes, we were busy with the media but it didn't get the attention I thought it should.

Yes. Well, I noticed you had a number of photo opportunities. There was quite a process put in place as far as for media to get badged. A lot of inquiries to—?

Yes, and most of those, though, were of course local reporters here, and there was always that interest, and places like Albuquerque where they're very familiar with the Department of Energy, formerly the Atomic Energy Commission, places like that. But on the national news circuit you didn't see too much of that. We had some UPI [United Press International] and AP [Associated Press] people coming up from California, Los Angeles, but again—there was coverage, I don't want to say it, but I didn't think the significance of it was ever truly understood. I thought it was a historical part of the end of the Cold War.

Well, I had read in one document, Thomas Clark had said that, I think it had been 1982 since the media had actually watched one of these tests, and this was really an opportunity that hadn't been opened up for quite a while.

Yes, in the last few years of testing we opened up a little bit more. After the Joint Verification Experiment of 1988, subsequent to that occasionally news people—we always broadcast it over the radio, you know, the exact zero time of a shot and we would have the countdown on the radio, especially some of our larger tests, so people in Las Vegas, in the event they felt any ground motion at all or any movement of a tall building, that they would know that it was not an earthquake; it was an activity at the site.

Now you were making a point of announcements before the tests for the reason so that the public could gain a little more confidence in the test site, weren't you?

Well, confidence yes, but also the fear factor. If you were on the top of a tall building and we were doing a large experiment, the ground motion which would be fairly slight, but if you were on the top of a tall building you would feel the same movement that an earthquake would provide. So we wanted to make sure, so we pre-announced and then we would announce on the radio the actual countdown. We never knew the exact time of a test before the fact, because depending on weather conditions and things at the site. So we would announce that on the radio live and let people know. Also, you know, in case people had any damage. With some of the larger tests you might have a cracked window, or if you had a water well in your back yard, depending upon the exact geology of that area, there might be some damage done to your well. And we had a contractor who would go out and investigate the damage and then we would pay whatever was required.

OK. I found some names, and one of the names happens to be the author of this book that you showed me, I Am A Hawk. *Let's see, what was his name?*

Viktor Mikhailov. [*I Am a Hawk: Memoirs of Atomic Energy Minister* (Edinburgh: Pentland Press, 1996)]

Yes, Viktor Mikhailov, yes, and he's on the list. Tell me what you remember about Igor Palenykh.

He was their similar to Paul Robinson was for us. I don't think he had the exact same title probably, but in their world he was the ambassador for nuclear test talks. And so he was over in Geneva and he would negotiate with Paul, and he came out here to the test site. So he was the **[00:25:00]** political person in this activity.

Yes, so he came for the January visit. Did he come again?

He came for the January and he came many—oh, he came many times. He was here on the event day.

Oh really. Oh, on Kearsarge then, August 17.

August 17. He was here then and came out a number of times. Like I said, he's since passed away. He was quite a gentleman, very smart, but he was a political guy doing the negotiating.

Tell me what you remember about Yevgeniy Kutovoy?

Other than that he was part of their scientific group. I don't really remember much about him.

OK. Well, here's Sergei Zelentsov, Soviet air force.

Yes, he was another member of their party over here, and it was interesting for a couple of reasons. One, of course, a lot of them did not speak English, so our communications were totally through the interpreters. Number two is any formal conversations were with very few people. Palenykh that you mentioned and of course the author of our book, Mikhailov. We used to call him Viktor, so I keep forgetting his last name. Mikhailov.

Probably easier to remember the first names.

And it would be through people like Mikhailov. The rest of the people, you didn't have much to do with them really. Now their counterparts on our side, our scientists from Los Alamos or Livermore, dealt with them one-on-one with their counterpart, an engineer or a physicist, *et cetera.* But as far as management people, we were dealing mostly with the few that I mentioned. So most of my memories and my dealings are with those few.

With Viktor. Probably with Viktor.

Viktor, Palenykh, and later when we went to their test site, with General Il'enko, which would be this individual right here [newspaper clipping, N.Aquilina14].

OK. Now it looks like their nuclear program was more under their military?

Well, the way they're set up organizationally, they have a Ministry of Atomic Energy is what they had, equivalent to our Washington kind of a thing. But at the test site, General Il'enko was

their test site manager. That's that individual [indicating photo]. Not Mikhailov; Il'enko, the general, he was their—I think probably in here somewhere the proper spelling of that is [sound of pages turning]. He might have it in his index.

Oh, here he is right here. There he is right there.

There he is. That's him. He's the Soviet commander.

OK. I thought I saw that name somewhere. OK. So you had more to do with Il'enko then?

Yes. I was his counterpart, so he would deal with me.

Oh, he was your counterpart.

Yes, because he was the manager of their test site. I was the manager of our test site.

OK, and he's an army commander.

Yes. Viktor Mikhailov was more like a lab director here. It's not equivalent exactly, but if you looked at Palenykh was like Paul Robinson and then Viktor would be a combination of Troy Wade at the time and the director of a lab, because he was head of their science stuff. And then their manager, General Il'enko, and I, we were managers of the test sites. So that was our counterparts.

Well, let me also kind of go over some of the U.S. officials that were named on the list. Joseph Salgado.

Joseph Salgado was the headquarters, Department of Energy guy. Joe was the head of the operating offices, chief operating officer, for the Department of Energy. But the interesting thing and an interesting story about Joe is that while he was going to their test site, because he came for the shot, the Senate approved his appointment by the president as deputy secretary of the Department of Energy. That happened while he was *en route*. So we thought, and Joe thought, that it would be a wonderful historical, unique thing to have him sworn in on their test

[00:30:00] site. So Troy brought a Bible and in our barracks with all the Soviet generals with all their medals observing, Troy swore in Salgado as deputy secretary [N.Aquilina4].

On Soviet soil.

On Soviet soil, and when you swear in, you know, you talk about your enemies and "under God" and so I guess those Soviet officers must've been wondering what in the world are these people doing. And I was relaying our process through an interpreter to these officers of the Soviet military, and there was Joe taking his oath of office. So that's who Joe Salgado was. He kind of was our boss; he was Troy's boss in Washington.

Oh, OK, because I have been trying to figure out what the personnel organization would be. OK, so you would say that Salgado—?

Well, he was the deputy secretary of energy, so he was all our bosses. John Harrington was the secretary at the time.

OK, Harrington, and then Troy Wade was kind of between Salgado—?

Troy was under Salgado as the assistant secretary for defense programs, and then this office, Nevada, reports through the assistant secretary of defense programs, so that was the chain of command.

OK, yes, that's helpful there. Now we've got Ambassador Paul Robinson—

Paul Robinson. Wonderful guy. He was the ambassador, official appointed by the president and the State Department—he was in the State Department—as the ambassador for nuclear test talks, was his title.

So did George Schultz kind of turn things over to him then?

Well, he would be working for George Schultz as the head of the State Department and as you know, there's many ambassadors under him, but Paul's title was ambassador for nuclear test

talks, so Paul was head of the negotiation team in Geneva. But the interesting thing is Paul came out of the weapons program, so he wasn't just a political State Department person. Paul was the deputy director of Los Alamos National Laboratory at one time in his career, and today he's the director of Sandia National Laboratory in Albuquerque, New Mexico, which is a contractor to the Department of Energy and does the engineering part of the nuclear bombs. Oversimplification, but Livermore and Los Alamos does the physics and Sandia does the engineering. It's more than that, but if you had to look at it in a very simplified way, the design people are Los Alamos and Livermore; Sandia's all the engineered parts of the bomb; and Nevada is where they test.

Well, I understand in order to coordinate a test, you're dealing with seventeen different organizations.

Incredible amount of different organizations, ranging from national laboratories to Department of Defense to many other federal agencies like the weather bureau and the USGS [U.S. Geological Survey], and then all our contractors at the site. So it's an incredible web of different organizations that comes together, and all at that moment reporting to the Department of Energy.

It seems like the collaboration that goes on among that many people, that many organizations—

I've never seen anything like it at any other site, and certainly no other government organization.

Well, this is, you know, to me the very interesting behind-the-scenes preparations for one of these shots, you know, because a shot might have a name but all of the organization that takes place behind the scenes is just, I mean, it's phenomenal.

That's right. Was phenomenal.

Well, that's what we want to try to preserve is that part of the story. I noticed that you had called it a "can do" organization and that even that there was a reputation that some of your people

had that reached Geneva, and that Ambassador Robinson would tell you about how the work that being done over in the Soviet Union was being talked about. Could you share any of that?

[00:35:00] Well, a number of things. I went a couple times to Geneva myself because we had representatives there to help Paul and his team, because a lot of Paul's teams were State Department-type people who are good at negotiations but did not know very much about conducting a nuclear test.

Yes, what was practical, yes.

Paul did, but a lot of people under him did not. So we had a number of people on Paul's team. When I say "we" I mean Los Alamos, Livermore, Sandia, and people here at the Nevada Test Site.

Well, I noticed your assistant, Jim Magruder, was one of those who was a member of the delegation.

That's right, Jim spent time over there, because Jim is very knowledgeable about diagnostic systems. Before he came to work for the government, he worked for EG&G [Edgerton, Germeshausen, and Grier] who was our major diagnostics contractor, if you will, our technical support diagnostics contractor. They're the ones that develop the equipment that you get data from the shot. And when Jim was working for EG&G, he theoretically invented many things related to diagnostics. Then he came to work for us, and Jim had a number of jobs, but he was a test controller. We had three certified, trained, official certified test controllers. Jim was one of the three. We would assign a test controller for each event at the site, and for that event the test controller is in charge. The labs are in charge of the technical aspects of the explosion, but the Department of Energy's test controller was the one who said yea or nay. He would assure the

safety aspects and the security aspects. And so these seventeen or eighteen different organizations on shot day all reported to Jim Magruder.

And it either went or it didn't.

That's right. He was the final say. So that was Jim. And so he went over to Geneva and he would participate in the negotiations to let them know how things were at the site. But then we would send finance people over to see how are the financial stuff going to be done. We would send other people over who understood drilling. To give you a small example, I remember in one of their negotiations over there, you know, they were signing papers that talked about doing continuous cores, core sampling, which means as you drill a two-or-three-thousand-foot hole, they wanted one continuous core sample from the side of the hole. Well, that's impossible to do. I mean, you can't do that. They're going to break. The ground isn't that stable. You're not going to get a continuous core sample. But State Department people don't know that. They were putting that in legal documents. So we would have people who understood our drilling activities over there helping Paul's team, because there'd be quite a team doing all this negotiations. It's a very complex thing when you're negotiating with a country like the Soviet Union so you want to get everything as right as you can.

Now I understood that the second round of negotiations occurred in February, but the document wasn't actually signed until May, so are you saying then that the negotiations that you were involved in, and some of the lab people, went on from February until May? Is that the time frame we're looking at here?

Yes, and they went on far after the shots, because now you had the experiment to prove you can do it. Now the question became, how do we continue to do verification of large experiments on each site? So right after the successful story of the JVE, they began the negotiations for

implementation of this process. And there's an organization in our government, and it's part of DoD. It's called the On Site Inspection Agency, and these are the people in a lot of treaties, different kind of treaties. It could be, you know, your chemical weapons treaties or it could be your downsizing of nuclear weapons treaties. That's the organization that does the on-site inspections all over the world. So now they got involved in the negotiations because if there was going to be Soviets on site for all future shots, they would have to follow the protocols of the On Site Inspection Agency.

[00:40:00] *So you were establishing a future, a possible future—?*

Exactly. Well, because the intent was that any large shots, and they would define over what yield that you were concerned about, that we would do it over there and they would do here. They would have a team of people to do a similar experiment every time. And they would be under the protocols of the On Site Inspection Agency. So we did an awful lot of work subsequent to 1988 on establishing the support centers, where were we going to house them, because now you're going to have people at the site all the time. How are we going to feed them? What kind of recreation? You know. What freedom were they going to have on the site?

So it wasn't just for that one shot.

Oh no, that was the start. That was just to prove you can do it in a way that was acceptable to each country. So that was just the start of it. Now, we stopped testing before we had to implement. But we had already done the surveying, gotten the money, and we were going to build a complex for them between Mercury and Area 25 where Yucca Mountain is, on that road back there, we were going to build it up against that mountain there, for security reasons so that there'd be no interference with our radio systems or microwave systems, and we had located where we wanted to put them, with OSIA, the On Site Inspection Agency's approval. We had

found a place to put them. We had looked at places like Indian Springs, the Air Force base. We were moving forward, doing the engineering, doing the construction, but then when we stopped testing, of course, there was no need to do that. But so yes, the JVE was just the start of a process. It was not the end of a process.

Now there was one test that was all prepared to be done, and it's still out there all set up. Was that one that you had expected the Soviets to be able to attend?

It had not been determined, but the process was going so that probably not. The reason that test wasn't conducted was solely because of the timing of the presidential directive of testing. We thought we were going to resume testing after a three-month period of time; after September of 1992 we thought we were going to resume testing to do our last fifteen shots, and I'm probably confusing you. Congress and then the president's approval, in attempt to stop testing, in 1992 passed legislation that said, `We are asking the Department of Energy to cease testing at the end of September 1992 for a three-month period of time. During that three-month period of time, you are directed to prepare a fifteen-shot program, five shots per year, for three years. These will be the shots that you feel you need to do to complete whatever safety or new devices you are designing.` That's kind of what Congress told us. So we thought our last test would be in September, that we would do what we were directed for three months, and then we would resume for three years to do these five, five, and five tests, fifteen tests. But then President Clinton at the end of the three months kept extending that until finally he said no more testing. So we never did resume. The one test that was ready to go, that you described that's still—

Icecap?

Icecap, which was a British test that we were conducting for the British. They paid for it, it was their device, but it would be our people would conduct the test. It was Los Alamos in this case.

And we never conducted that test. What you see out there now, and then, was the experimental stuff. The device never came; it was never put in there, so it's just the experimental stuff, the diagnostics. The hole's there. Hanging over the hole, as you probably might have seen. We now use it as a training and a tour place, show people what it looks like.

[00:45:00] *Yes. So it sounds like your most exciting time was 1988, then, and then it kind of got a little bit lighter.*

Yes, I realize this particular interview is just about the Soviet intervention, but we had a lot of exciting things at the site. You know, you go back to 1970, we conducted experiments out at Amchitka Island, the second-last island in the Aleutian chain. Great stories on that particular—

Well, I think that one could be its own book.

That could be its own book, and there probably is some books on it, but that was a wonderful, exciting time, if you will.

Well, Mary [Palevsky, oral history project director] said we can do more interviews of you if you have more stories to tell, so I think this will be great.

Well, the further we get away from those years, the more my memory starts lapsing on me.

I understand. I also have to kind of keep an eye on this, too, [indicating recording machine] because it gives us seventy-five minutes per disk, but I have two disks and she's even given me a third disk. But, you know, I didn't want to, oh, overstay my welcome on this, so we were kind of shooting for somewhere between an hour-and-a-half and two hours.

I might just mention to you some of our interesting experiences at their site.

Oh yes.

You know, they had converted some old military barracks for dormitories for our people. We would fly into Semipalatinsk in the Republic of Kazakhstan and then we would take about a

four-hour drive to their test site. As we've said a number of times, it was a military installation, so you would see military people there. We had sent different kind of people over there at different periods of time. We sent drillers over there when we had to do drilling operations. We sent technicians from the labs and EG&G when we were setting up our CORRTEX experiment that we've talked about. And we would send some of our scientists and other people as we approached shot day. So we had that limit of forty-five people at any given time, so we would have to adjust who we would send over. There are a lot of great and funny stories about—

Start with the first group, the Shagan River Rats.

Well, the Shagan River Rats, you know, became the name of our first people who went over there. We just called them the Shagan River Rats because they had to get accustomed to each other. You know, all of a sudden you were dealing with your worst enemy, if you can imagine, dealing with your worst enemy, and each night you would have to sit down and negotiate with them tomorrow's work plan. You know, every day you would have to sit down and negotiate. And the Soviets were very tough negotiators, and they would wear the black hat/white hat kind of a way. They would send in a guy as their lead who would negotiate nothing, and they would wait for our people to finally almost walk out, and then they would send the white hat guy in and `OK, we'll compromise on this issue.` So it was a difficult task every night to do that.

Our drillers, I mean, drillers are wonderful people. Drillers and miners, to me, are the hardest working people in the world. I've never seen a driller with ten fingers or, you know, you ask them what time it is and they say `Four o'clock`. But they're just wonderful people and hardworking. Now you're taking these people, most of them from Oklahoma, Texas, who have worked at the test site and now you're sending them to this godforsaken place. And initially they put them in little trailers out in the field, like they were going to live there for twenty-four hours

a day in those little tiny trailers. And of course our people said, No, we're not going to do that. Our guys work twelve-hour shifts, but we want a dorm, a bed, a dining room. So a lot of our Shagan Rats would go back to their dorms, work twelve hours a day, six days a week, while they were over there drilling the hole.

And the Soviets tried to make life comfortable as they could. You know, that's 2,300 miles from Moscow, and they don't have distribution systems like we do. You know, you don't see trucks and rail delivering food products and stuff. And so you kind of ate and were served whatever that local area had. And we had a woman chef, for example, and a couple of her help, and they tried to do their best, and some of the things were wonderful, but they were local cooks who got local products to serve us. It was kind of funny because she used a lot of garlic, which **[00:50:00]** was a local thing. The meats they cooked to death. But she was a wonderful baker, so you got good baked products. And her soups were good soups; she made hearty soups. We always kid about the meals were so heavy all the time, three meals a day, that we asked her if she could lighten up on the meals. So we sent from here on one of our planes going over some salad, iceberg salad, lettuce. And when she got it, that's a cabbage area over there, I think she assumed it was cabbage because she boiled it, fried it, roasted it. And finally we had to go in and say, Here's what we do with this lettuce. We make a tossed salad and you got nice olive oil.

They had nice olive oil and vinegars, you know. And we showed her how to make just a vinaigrette dressing. So we taught the chef over there to make a tossed salad, and that was very nice.

When we got there, they were providing one bottle of wine per table of four in the dining hall at night, which was quite different than over at our site, because they drank quite a bit in our steakhouse at night. But we got one bottle of wine, and every day they put out two bottles of beer

per person that you had there. So if you had forty people, they put eighty bottles of beer out. Now they didn't care who took the eighty, but there was two [per person]. And of course a number of our people didn't drink, and people quickly learned who that was—

Yes, and they got their portion.

You got their portion of either the wine or the beer. And I used to always kid Guy Allen who was our team leader over there toward the end, that I made sure I always sat with Guy at night at dinner, and he could never figure out why I sat with him every night. Well, because Guy didn't drink and I knew that, so that share of the wine was bigger for us without Guy in it.

Yes. Now when you said "we" were you over there with the drillers for part of it?

No, I went over in late August of that year. There was no need for me to be there. We sent team leaders over there. We would rotate them every couple of months, a team leader, and they would be, you know, the senior person on board, if you will. And when you have a limit of people, we couldn't send too many tourists over there, because we would often need our full contingent or more, so I tried to resist sending over tours. We sent workers. But then Jim Magruder and I went over together at the end of August, after Kearsarge then we went over there and we stayed through the Shagan test. But we were more, at least I was more of a titular head is all. You can't interfere with the people who are doing the work, you know. And so I went the last three weeks and spent it over there. From a historical point of view, I'm sure glad I did. That was quite a period of time leading up to shot day, and then when a lot of the VIPs started coming and people from the ambassador's office in Moscow, and Joe Salgado and Troy Wade came over.

The dignitaries.

The dignitaries all came over for the shot.

Yes. That's a good time to be there, really.

Jim and I got a lot of opportunities to see how they operated. We got into facilities that no person has ever been in outside their country. That area, they tell me that no foreigner had been there since 1848 or something like that. They had never seen a black person, and a couple of our pilots and some of our workers of course were the first blacks they ever saw. We flew in six C-5s into Semipalatinsk with all our gear. And a C-5 is that gigantic freight plane.

Well, that was part of the negotiations too from Geneva, to allow an American plane to fly into Soviet air space.

I remember when the young pilots came into our office for briefings. They seemed young to me at the time. And when we told them where they were going, they kind of gasped, that they were **[00:55:00]** going to go into the heart of the Soviet Union. I mean, here's people trained to fight the Soviet Union.

To shoot them. You don't, you know, fly into them.

—and here we're going to fly big C-5s right into Semipalatinsk. That was quite a shock to those young Air Force pilots, to take those big planes in there with all—well, we send drill rigs and trailers and all kind of gear. It was quite a logistical effort. We used to go up to Indian Springs and watch them loading the C-5s and then taking off.

Well, I was surprised at how much the CORRTEX weighed. That that was a seven-story-tall plane with two trailers, and [DOE/Dina Titus Reading Room librarian] Jeff Gordon has some pictures in his book, the Kearsarge. But I think you may have shown me some in your pictures too.

Well, you know, they were fully loaded trailers. I don't know if you take a look at the size of those trailers, but then they're loaded with all the electronic gear and oscillators and

oscilloscopes and everything in them. So I never knew the weight but I could imagine the weight and the size.

Well, they were huge. Seven stories tall.

Right. Seven stories tall.

The planes themselves.

Oh, the planes. Yes.

Yes, the planes themselves.

Yes. Not the trailers. The trailers are like—

No, no, no. Seven-story-tall planes.

Right. Well, the C-5 is the biggest plane we have. By the way, the Soviets have a bigger freight plane. I don't know if you've ever seen a C-5 take off, but they don't even look like they're moving. I mean, they're so big, they just kind of go up in the air, and it's an amazing—every once in a while you'll see one out here at Nellis [Air Force Base], coming out of Nellis. But anyway, we sent six of those over there, and that was quite a—now Jim and I, an interesting part of our trip, we flew into Moscow via commercial planes, but then once you get into what we'll call their international airport, everything going within the Soviet Union at that time, there was a separate airport for that, for internal, and Aeroflot was their government-owned airline. And so Jim and I went into Moscow. We spent a day or so there, and then they came and picked us up at our hotel. We were staying right at the square, right where you see all those churches, you always see the pictures of the churches. And they took us out to their internal airport and we got on a commercial Aeroflot plane with about three hundred other just citizens of the Soviet Union flying that way, one flight a day, I guess it was. And when we got on that plane, I wasn't sure

Jim and I should be on that plane. It just looked dirty. You wondered about the maintenance, how it was taken care of.

You said it was a government-owned plane then?

Well, when I say that, Aeroflot, which would be like our Delta, is government-owned over there, so they have an agency that runs the airlines and Aeroflot. And it was a big airbus and there was three hundred and some passengers on it, and me and Jim. But a great story. You wish you had photos of it. They just parked their plane on the tarmac, and they don't have a walk thing like we do. Jim and I walked down the steps and went on the tarmac with our people who were taking us out there, although they didn't get on the plane. They left us once we got on the plane. And here's three hundred people just in a mob, if you will, outside the plane, waiting to get on,[and] walk up the steps of this huge plane. And it was like the Red Sea opening up when we came, and these people just all moved aside. They escorted me and Jim up the steps. We went in and we sat in 1-A and 1-B. And then they let all these other—they must've wondered who in the world were we, you know, who are these people?

Well, they could tell you were official.

Because they had no idea what was going on. Our interpreters had left. Our guides left. Jim and I were on the plane all by ourselves. Now if they had any KBG guys in the back watching us, we don't know, but none of the people we knew stayed with us.

Now were you headed for Semipalatinsk after that then?

[01:00:00] We flew right into Semipalatinsk, about 2,300 miles. It would be like going to Philadelphia from here. And you know, it's interesting the little food you got, which was a terrible-tasting juice and then some bread and some cheese that the hostess gave you, the stewardess. And then we landed in Semipalatinsk and they picked us up in vans and we drove up

to—the four-hour trip up to their test site. So that was quite an experience. And I'm sure, as I said, a lot of those people must've been wondering, Who in the world are these people? Because they've never seen foreigners. I wish I had more time to talk to the local citizens. Who do they think we were? What do they think was going on? Because there was no communications with them.

Now I understand that there were some media people who were allowed to see the Shagan test?

Well, that goes back to the Kearsarge event out here. When the Kearsarge event occurred out here, there was media allowed. And after the shot that afternoon, we had a press conference out at the test site, and Palenykh and Paul Robinson were the two people, head of the press conference. And one of our news media raised their hand and says, Well, I notice there's Soviet news media here. May I assume you're going to invite U.S. media to your site? Well, he was kind of stuck with that kind of a question. And he said, Well, certainly. Well, two people from the United States actually asked their bosses if they can go over. One was Mary Manning of the *Las Vegas Sun* and one was the reporter for the *Albuquerque Journal.* But unfortunately, Mary got there after our plane left, and shot day I got a call from the—I think it was from the embassy in Moscow saying,

Sir, do you know a Mary Manning?

I said, Yes.

And he said, Well, she'd like to speak to you.

So she got on the phone and she said, Nick, I'm in Moscow.

I said, Mary, you can't get here. There's one flight a day.

She said, Well, I've been sick and I've been in the UPI offices laying on their couch because I got directed to the wrong ministry when I landed. They

sent me to the Ministry of Defense instead of the Ministry of Atomic Energy, and so here I am.

I said, Well, you'd better take care of yourself.

So what we did when we got back to Moscow a couple days later, I set up some interviews for Mary with people like Paul Robinson and Troy Wade. So at least she had some stories to write back to her paper here. And the same with the *Albuquerque Journal.* There was a couple international reporters at the site on shot day, but Mary was not there.

Yes. Let me double-check where this is [indicating recording machine].

[01:03:28] End Track 2, Disk 1.

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

[00:00:00] Begin Track 3, Disk 2.

OK, let me just kind of go back to some of these other U.S. officials, and I appreciate any comments and memories and stories that you have. They seem to be kind of some key players in the JVE. Tell me about Troy Wade.

Well, Troy is an old-time friend of mine. Troy came to the Nevada Test Site in the late 1950s. He came out of Cripple Creek, Colorado where they mined gold, and eventually started at the test site as a tunnel walker in our tunnels. He became a high explosive guy with Livermore National Laboratory assembling nuclear weapons, and then he became supervisor of that operation. In 1969 or 1970 he came over to the Atomic Energy Commission in nuclear explosive safety and progressed through the ranks and became an assistant manager. Then he went to Washington, and then he went to Idaho as the manager, back to Washington as the acting assistant secretary for defense programs until he retired. So Troy has that unique thing of knowing the field, knowing test operation, knowing nuclear weapons from an assembly viewpoint, and then knowing the political aspects from the Washington point of view. Plus Troy is just an incredibly

energetic, interesting guy. As you know, he spends half his life building this dream of ours called a museum [Atomic Testing Museum]. I give Troy ninety percent of the credit for how much energy he's put into this. So at the time Troy was a very key player because he was the assistant secretary for defense programs. It sure helped and was a joy to work with him. It helped that I knew him so well before, because often you don't know your counterpart in Washington other than [a] boss relationship. So it made my job a lot easier. I always kid Troy that in January of 1988 he called me about, as I said earlier, about this plan, the visitation and the work, and I remember him saying, And our schedule is that we will do Kearsarge on August 17 and Shagan on September 14. And I started laughing. I said, Troy, we don't even know what you're talking about and you've got schedules? Well, lo and behold, we conducted Kearsarge on August 17 and we did Shagan on September 14, 1988. So Troy is a special guy, and of course now he lives here in Las Vegas.

Yes. He had a good idea of what could *be done.*

Just amazing.

Tell me about his participated in some of the negotiations. Is that kind of the primary things he did then?

No, no, Paul Robinson was head of negotiations. Troy was assistant secretary for defense programs so in addition to the Joint Verification Experiment, don't forget he was responsible for all the activities at Oak Ridge, Albuquerque, Pinellas, all the DOE sites around the country. So all during that period of time, I mean, he'd be focused on JVE when he had to be, but he had a lot of other things on his plate going on at that time.

Yes. And he showed up on some key dates then.

Exactly. Came out here a number of times.

Oh, OK. Well, tell me about George Murphy.

I really don't have much memories of George, other than knowing George.

OK. What about Ambassador Lynn M. Hansen?

We just saw him a few times, so all of my experiences and memories of the ambassador is listening to him give a talk or interviews, stuff like that, but I had no day-to-day relationship with him at all.

OK. Yes, I'm only trying to, you know, see if this stirs any memories, because these were just names that I found. Robert Barker?

Robert Barker was a former Livermore lab guy, and then he was with the defense department, and so he was greatly involved in what did all this mean, from a defense posture of this country. **[00:05:00]** And so we had a lot of wonderful times because I knew him before that. I knew him in the test business. So our memories are that he was always there when we needed him. When we would have discussions on strategies or where we had to go, what did we have to talk to Paul Robinson about, he was one of the guys, he was one of the key people that we would talk to.

OK. What about Victor Alessi?

Vic was working for Troy in Washington at the time, and he was kind of the contact with the office of On-Site Inspection Agency that I mentioned to you before.

The one that goes all over—

Right, and Vic was the DOE person. And he dealt a lot with these kind of people. We had known Vic for a long time. So I always enjoyed Vic, particularly that he traveled to Europe a lot and always brought me back Belgium or Swiss chocolate. He knew that we liked the Belgium and Swiss chocolate and that there was a big discussion on which was better, the Belgium chocolate or the Swiss chocolate, so he would bring both back from over there. But when I'd go to Geneva,

usually Vic was there, and so I spent a lot of time with Vic, both socially and business-wise. Many years after our experiment, I spent a lot of time with Vic. Again, he is very knowledgeable of negotiation strategies. He's very knowledgeable of the On Site Inspection Agency's responsibilities. He's also very knowledgeable of the people who are always negotiating some kind of a treaty with a foreign nation, whether it was this treaty or many other treaties. So he really gave us a lot of insight into the political aspects of it because a lot of us didn't have that kind of background. That was a foreign world.

Yes. What about Joseph Behne?

Joe Behne. Joe was the test director for Livermore, and he became the test director for Kearsarge. Normally for an event at the site, it's either a Los Alamos experiment or a Livermore experiment. But Kearsarge kind of was a joint effort. I thought it was very interesting that Joe was a Livermore employee but he became the test director for Kearsarge, which was a Los Alamos device. Joe was the perfect guy because (a) he knew the test site and how to do everything leading up to an experiment; (b) he was one of the few guys that could work easy with the other lab. You know, there's two labs and a lot of competition, but Joe's personality was able to work very well with Los Alamos, and maybe more importantly, he had the kind of personality that got along with the Soviets very well. The Soviets liked him. He was just a field guy. I mean, he wasn't a politician. You know, you see Joe, you know he's a field guy. He just loves to work in the field. All the crafts out at the site just liked working with Joe. So he had that kind of personality, and as a result he was there twenty-four hours a day, and that August 17 day on the schedule, Joe made sure everything was ready that he had authority over to get to that shot. So Joe was a special person. He now is retired, lives here in Las Vegas. I see Joe a lot. He's on our board of directors here at the museum. Just a wonderful guy but a field guy that made that

task a lot easier living up to the schedule date. I told you before, Jim Magruder was the test controller. I don't want to get the words, you know, confused. Joe was the test director, so he was responsible for all the experimental stuff and the construction needed to get the job done. But then as they approached the shot, he reported to Jim Magruder as the test controller.

Yes, that has been something that I've been kind of puzzled about.

That is very confusing, yes.

OK, let's see. Just kind of going over some of the things that happened in February. I found a document that it talked about provisions and privileges and immunities of the JVE members. Sounded like you'd gotten an OK that it was time to get ready to prepare to send some people over to the Soviet Union. Can you tell me anything that you might remember about that February?

The only thing I remember about that particular date, that was a requirement that we had to put **[00:10:00]** together a list of people, was the difficulty in making sure we had all the right people on a list where we were limited to how many we could put on. Because we weren't sure, this was such a new thing to us, we weren't sure what our needs were going to be, and so we spent a lot of time with the labs and with our contractors, especially EG&G but then our drillers, of how many people made up a party of forty-five at any given time and they were the right people for the work that needed to be done. I mean, when you're drilling you need certain kind of people there and you need certain support people. When you're moving in trailers and putting the cable in, you need certain kind of people. And then you need people from the lab. So it was a very interesting scheduling kind of a problem, to make sure you had the right people, and then we had to make sure that the people were acceptable, that they weren't going to—something in their background—

Clearances and various—?

Whatever. Well, clearance was no problem because we were all Q-cleared. But you never know. It's like when you're picking a jury for a trial. Is there somebody there that the prosecuting or the defense attorney is going to object to for some reason? So we had to be careful that we didn't have somebody who they would object to. It would be nice to have some people that could speak more than one language, so we would look at that. But we had to have drillers there, you couldn't worry about language, you know. So that was a very—

Selective process.

It was a very selective process and a very difficult process of scheduling that kind of thing over the next seven, eight months.

Did you ever have the problem of someone who wanted to go but didn't have the right qualifications? Was there a lot of—?

Oh, lots. Everybody wanted to go. The kind of people that work in our business love those kind of experiences. I mean, you can go back to the Pacific days when we were at Bikini and Enewetak and Christmas Island and Johnston Island. We had a lot of people over there, and our people, when you're in this business—Amchitka was another example—they like being part of the action, you know. So the answer to your question is—

There were lots.

Lots. Lots. And you know, to this day, here we are sixteen years later and every once in a while I'll talk to someone and I'll say, `Boy, am I regret[ting] that I didn't go over there.` You know, to this day. Lab guys. Some who could've, because of their position, could've got in. Bob Kuckuk who was the deputy director of Livermore before he retired, to this day Bob would kid me about how much he missed not going over there, that he wished he had gone.

Well, the stories of those who came back, there was a lot of those.

Yes. Well, it's always nice to participate in a little piece of history, even if you play a very small role in that, but it's kind of nice to be a little piece of history. You know that picture of George Schultz signing the treaty thing, Troy Wade is in the back. Now he didn't have much to do with it, but it's kind of nice being in that historical—you can't see him, there's people in front of him, but Troy is standing in the back.

Yes. Well, I thought it was Reagan then and Gorbachev were standing in the back. [laughter] I think they said those two were "looking on." I think that's what that was. OK. Now, there were some interesting comments that you had made of that first group of people, the loggers and the drillers, that went over to Shagan, and you had said that some in those group had been in the Soviet Union for as long as seventy-nine days, and you expressed some of the sacrifices that they had made.

Well, obviously they're away from their families for almost three months. They're working six twelves, sometimes seven twelves. Not much to do, you know, other than work, sleep, and eat, you know, and there wasn't much to go. They would put a movie in for us or stuff like that, but there wasn't much, so it was—you know, there was the interest of being there, there was the historical aspect, but then there was a lot of hard work and loneliness.

There was a lot of work. Well, you had described one man who had had a baby born.

Right. We had, you know, people while they were there, their wife had a baby over here. So there was a lot of personal sacrifice in that thing.

And that there was no telephone connection. He couldn't find out how she was because he was in such a remote spot.

That's right. That's right. That's right. Now, we would try to get messages to them. I recall, you know, we had, I couldn't remember exactly, twelve or thirteen hour different in time zones, and **[00:15:00]** so when we would call them, it was either in the middle of the night there or the middle of the night here, you know, and if people had messages we would try to get messages back and forth. Of course, today it would be a lot easier with e-mail, wouldn't it? We'd just scoot a lot of e-mail over there. That would be all right.

Yes, it would. Yes, it's made it a smaller world.

It sure has.

You had also described a group of people, because it was the end of the school year and that there were graduations that had been, you know, that you had said had been missed.

Yes, like I say, there was many personal sacrifices of that type. But I never—there might've been one or two, but I never talked to anyone who regretted participating in that whole thing. I mean, we sent some people to Moscow to be our coordinators in Moscow, not at the test site. But you know, when you're sending so much materials back and forth, when you have people going back and forth, you got to have somebody who is kind of—

A support?

A support group in Moscow making sure thing are happening. And that was different than being at the test site because here they were in Moscow and not a very friendly place to them. They didn't know [anyone], you know, they were just living in a little hotel. Our embassy over there wasn't very supportive of them.

Oh really?

I mean, they didn't do anything intentional, but I thought they could've been more proactive.

Now is the support personnel included in that forty-five limit?

No, this was separate, and we rotated people over there through that period of time. We had two or three people there at all times, and then we would rotate them every couple months or so. Lou Perrin was over there, *et cetera*. But that was a tough job because one, you had to make sure things were working. When planes would come in with people, you might have to be the one who meets them, greets them, tells them what to do next, make sure they have all the right things, *et cetera*. So that was a tough job for those people. But like I say, I can't recall anyone ever telling me they regretted participating. And Chuck McWilliam had a terrible experience, because after it was all over, he was the one that was assigned to escort our drilling equipment back via rail to the Pacific Ocean, to the far, far eastern shores of the Soviet Union. And Chuck got pneumonia *en route*, and they actually, in one of the small towns they stopped with the train, took him to a hospital. But when Chuck saw this hospital he said, Leave me alone. I'll die before, you know. I mean, Chuck has some interesting stories. But then he got to the seaport, Vladivostok I think it was, and then came home with the stuff. So that was quite a story. But he was quite ill. Quite ill.

We had a number of people, you know, you could obviously get ill in your house, but I remember Paul Robinson caught some kind of a bug while he was over there and boy, Paul didn't feel well for almost a year after that. I have no idea if it was coincidental or what, because I never had it before, but the weekend after I got back I remember taking a shower and I looked at my body and I had a rash from my neck to my toes. Nothing on my face. Just my whole body had this rash, you know, real red, red rash. I didn't feel bad or I didn't—so I went to the doctor, our site doctor, and he sent me to a dermatologist, and the dermatologist, I'll always remember, said to me,

Are you hurting?

I said, No.

He said, You itching?

Not bad.

He said, Well, you know, I can give you medication and it'll go away in two weeks, or we can do nothing and it'll go away in two weeks.

So I chose the "do nothing" and in two weeks it was gone. But we talked about, it could've been the kind of—they washed our clothes, you know, we used to put a bag out in our room and they would wash our clothes. It could've been the detergent they used. It could've been the water. We would take baths there. They didn't have a shower. We'd take a big—I remember we had a—you'd have a hard time climbing in and out of this bathtub. But it could've been the water, you know, you don't know. But boy, I just had—Troy didn't feel well when he got home. Jim Magruder came home. We were going to spend a day or two in Germany, Jim and I, on the way **[00:20:00]** back, tour around, and he got so [sick] with the flu-kind of illness that he came straight home, so I spent a couple days in Germany by myself.

But other than that, I never heard anyone say they regret going. I hear a lot of people regret they didn't go.

Yes. That's interesting, some of the health problems because, you know, there're some countries that it's almost expected and you're notified—

You know, in fairness to them, you know, new bugs, no matter where you are, we develop a whatever to our old bugs and—

Immunization. Yes.

Right. Well, you go to a new place and there's new bugs, and some people just fall under its spell.

You're just the new kid in town.

That's it.

OK I think I kind of mentioned about Geneva and Ambassador Barker and Robinson. You had said they had told you things about your people. Is there anything more that you wanted to add about—?

No, other than the courtesies we received over there were just wonderful, and that's a nice place to be. Now Geneva, you know, is probably the most expensive city, next to Tokyo I guess, in the world. Geneva is very expensive. But our guys who had spent a lot of time over there learned that if you cross the border into southern France, there's wonderful inns and restaurants and places to go to over there. So we had some wonderful trips. At night we'd just drive over into southern France and find some wonderful restaurant or inn, and that was really enjoyable. The people at Paul Robinson's office could not have been nicer, and by coincidence his secretary there used to be my secretary here in Nevada earlier.

What was her name?

If it comes to you later, that's fine.

If it come to me. How could I forget my secretary's name because—oh, Barbara. Barbara.

OK. Does she have a last name?

Well, she later married Paul, so her last name is Barbara Robinson.

Oh, OK.

Years later she married him. So they couldn't have been nicer to us over there, and so the trips to Geneva were very interesting. We would go over to the Soviet embassy and have lunch occasionally with the Soviets. Very formal kind of a thing. My cute little story there is when the Soviets were here, Viktor Mikhailov in particular, him and his six, eight, ten top guys would come over to my house once in a while for just a cocktail party we would have, a little social activity. He got to like my wife, who's a very outspoken kind of a girl, and he used to get a kick

out of her because she'd say, Viktor, don't smoke in my house. Go outside and smoke. And so when I go over to Geneva, we were having this luncheon at their embassy. It's very formal, lines of people on both sides introducing, and Paul Robinson is introducing his team. And I'm kind of the low man on the totem pole with all these State Department people, and I'm down at the end and it gets to me and he says, Mr. Aquilina from our Nevada Operations Office. Well, when he says that, Viktor, who is on the other line, [speaking with accent] Mr. Aquilina, I have something for Freda, and he brings over a present, wrapped, and hands it to me. And I'm kind of embarrassed because the only present given was Viktor giving a gift for my wife back here. And it turned out to be bedroom slippers that were made out of an animal skin from the Soviet Union. My wife wore those until they literally fell apart. They were so comfortable, that soft, nice animal skin of whatever it was. And it's just recently I made her finally throw them away. But she had them for years. But Viktor made a big deal out of that present for Freda.

Yes. A token gesture of friendship.

Yes. Very interesting.

That's really cute. OK. Oh, there was something in April. It looks like you had equipment that was loaded at Indian Springs to be shipped to Semipalatinsk. There was also during that month, I found a document that talked about classification guidance, that there was **[00:25:00]** *an interesting tension between the things that had been kept, what could be unclassified* versus *what needed to remain classified.*

Yes. I can't remember all the details now but there was a lot of things that we had to make specific determinations on what was classified or unclassified, because once they were on the site there's a lot of line-of-sight kind of things that you could see and a lot of questions would

come up about the classification nature of that. Their working area was a warehouse right adjacent to our control point, so the issue there was, you know, are there any concerns there with classification? They would come a lot into our diagnostic center and into our war room, which there is a picture in there, and so there was a lot of concerns about that kind of—if there were any concerns of classification. There would be documents back and forth on what was the proposed work that was required to support their experiment here and our experiment over there. You would have to do things like [consider] the size of the canister and the size of the device and did you have so much space between the device and the canister where they could put maybe a piece of their equipment, and the question then would be then, well, is there any concern how you're going to do that with[out] violating some classification problems? So there was day-to-day practical things and then some day-to-day difficult things on making determinations of classification. You know, here again, you're dealing with the Soviet Union and they're dealing with us, so—but it seemed to all resolve itself. I don't recall any problems that resulted from it.

No, it was just addressed and get clearance from Geneva and—

Yes. Right, it was major thing when Geneva would say to do something, we would have to look, well, was there a security concern as a result of doing that?

I just thought that the organization, the details that had to be addressed- whether you're talking about escorts, or the logistic-there just seemed like there was more things to think about—

Oh my goodness. We had to have people there twenty-four hours a day, off work too, I mean, because they would have to go with them over to the cafeterias and then we would try to do some entertainment, so they would play softball, and there were some funny things because they never played softball before. You know, trying to learn a game like that. Frances Guinn who was in some of those pictures, Frances was assigned to their off-site social activities. Frances would

take them on weekends to Mount Charleston for picnics or she would take them downtown to shopping; she would take them to the Target store. She had a bus at her beck and call at any time. They wanted to go to Disneyland so she took them to Disneyland. They wanted to go to the Pacific Ocean while they were down there, so she took them to that. They really got to like Frances because she would just take care of all their whims and needs. Every weekend she would take them somewhere. And so there was a lot of that that, you know, doesn't get much attention and those people don't get recognized very much. But I recognize what Frances was doing and what Ernie Williams was doing, you know, all these people by name what they were doing out there. The cafeteria. You can imagine the pressure on our cooks out there, because we had an incredible number of formal dinners and banquets in the Mercury cafeteria, and then every night they would go to the steakhouse and eat their dinner. So you had to be courteous, you know. The cafeteria people just did an incredible job, because that was for eight months, you know, for a long period of time.

That is a long time.

Oh, when you're catering to people and you have VIPs showing up and big formal celebrations and big formal banquets. There were some incredible banquets up there with the Soviets. So I give them so much credit. I'm a food guy and I grew up in restaurants and stuff and it got to be they would send the menu down to me for approval and changes and I would **[00:30:00]** say `No, we're not going to have this with this; we're going to have this.` So I'd be writing down all these little things.

I didn't know that was part of your job.

Boy, they didn't either. And finally they started doing it because they knew I was going to say something. But, you know, it's matching things for dinner. Some things don't match and some

things do. But I remember, one of my things I don't like is when you're at a banquet and you get your salad and it's just a big lettuce and tomatoes and cucumber salad, and then they have big, big salad dressing thing with three salad dressing things that you got to get a spoon and plop it on the top. I hate that.

You like it mixed in?

To me, a salad is supposed to be tossed and mixed, and so they used to kid me, I stopped that. I said, You select whatever dressing you want. I mean, you're tossing it in the kitchen, and when you serve the salad, it's going to be dressed. I don't want this big—so they used to kid me that I was the chef out there for at least the putting together the menu and the salads.

We had a lot of big, wonderful celebrations. After the test over there, we had a big, wonderful celebration. They took us to a movie theater-type of arrangement and they had the typical what you would think of Soviet or eastern European entertainment: dancers, singers, and gorgeous costumes. And they put a whole two-hour show on for us. It was very, very impressive. And then we went and had a big banquet and we had a cocktail hour and big banquet and a thousand toasts. You know, everybody's toasting everything. That was a great experience, just having that social aspects of it all, and those memories are coming back to me now of that wonderful evening that we had after the shot. Very nice. Then they flew us back in their own private 707 plane, a VIP plane, and that was a lovely trip.

Well, I understand you met a Jeep driver that had some key chain souvenirs from Las Vegas.

Well, see, our guys when they went over there- and we had talked about it - brought all kind of little things, and being in Vegas, you know, they'd go around to the hotels, our PR people, and got all kind of key chains and, you know, pens and light—

And distributed them over there?

And while they were over there, our guys had them in their pockets, so if they met a kid or if they met somebody, anybody, they would—well, I remember getting in a Jeep and I'd look over and this guy has all kind of Las—you would've swore you were in Las Vegas. I mean, he had the Las Vegas key chains and he had the Las Vegas dice hanging in his thing, you know, and he—

A collector, huh?

Well, you know, they are quite collectors. I don't know what I've done with them and I got to find it, but I had all kind of pins. They love the little pins.

Those lapel pins?

Lapel pins. And we would trade them. And we took a lot of our JVE pins over, the one I'm sure you've seen of the flags, the U.S. flag and the Soviet flag, and things like that. So I had pockets of those and we would just either give them or trade them both in Moscow and at the site there. People on the street would trade pins. Sort of funny and very interesting. So I came back with all kind of different pins. I can't find them. I was going to bring them down just to show you them and I couldn't find them. I'm sure my wife put them somewhere.

So they have Soviet pins, is that what you're saying?

All kind of pins. All kind of pins, some with animals on them, you know, whatever, just collecting pins.

They just really like those things.

They like those pins, as collectors.

So if an American ever goes over to Russia, take lots of souvenirs with you.

At least then. I mean, you know, I don't know how it is now that it's five or six different countries, but they loved the Las—because even the name "Vegas" was a big thing over there.

But that Jeep guy was the best of them all. He had all kind of stuff. He must've conned our guys into giving him all kind of stuff. So that was nice.

Well, that's neat. In May there was a media event for the badging of the Soviet team. Can you explain the significance of that, maybe what you know about it?

No, it was just another media event, an opportunity, you know, like you saw my badge here. Well, we had badges for them out there and so when we were doing the badges our PR people just invited the media in to observe badges being given out. As I think back, they **[00:35:00]** weren't as nice as these, as far as a memory, you know. This has turned out very nice [indicating badge]. "Joint American Experiment," and then my name with their alphabet: H is N and AQ is K.

It's interesting to see your name in Russian, isn't it?

Well, you know, it's funny. When I came back, in some way a picture that I don't even remember having taken, with me and him, the general, shaking hands over there, got out. I swear every newspaper in America showed that picture with my name spelled this way [in Russian]. I got calls from everywhere in America, people saying, I'm in Miami, Florida. I just saw your picture in the paper with this strange name. It just showed up, just a picture in UPI or AP kind of, but a picture. It was amazing how that picture showed up everywhere. I don't even remember, you know. Somebody took it. I don't even remember, because we had a million pictures being taken, so I don't remember any event—

Yes. Now in June it seemed like, just kind of going chronologically, going down to countdown here, in June there was a great big huge interagency working group meeting that met for two days, and I was surprised, number one, that they came to the test site, and then the next question was, who were these people?

Well, this is the people like the On-Site Inspection Agency, people like various people within the Department of Defense, various people within the intelligence communities, DOE itself, State Department people. They came out for an interagency agreement, as it says, meeting just to make sure that there was communication and understanding or concern by anybody, what was next after the shots. They were developing that whole procedures and processes for it. So all the interested agencies, and there was quite a few, I mean—

Yes. Well, it seemed like they worked together to put together what was called an attendance plan. And they looked like they were centered on making this go perfectly. And what needed to be done to back up support you. Because they would, you know, they would identify the—

Remember Paul was an ambassador, and an ambassador in this country has a lot of rank, and especially his because he was reporting either directly or maybe one step to the secretary of state. So these other agencies all wanted to do it right, and a lot of pressure was on them because a lot of this involved various treaties or potential treaties. So he [had] people who would be involved from a treaty point of view, people who would be involved from an on site inspection agency kind of a thing, from a classification, from a security point of view, from an intelligence point of view. So there was a lot of people that were involved and it was complex kind of an operation because it was a first of its kind.

Now these were some of the people that have been named, and some of them were on the attendance plan. Chris Sankey, who is Chris Sankey?

He just worked over in our office.

OK, so he was just office personnel?

Yes.

OK. And then you've kind of told me about Chuck McWilliam.

Chuck McWilliam. He was our point-of-contact for the On Site Inspection Agency.

Now does he work under you or is he—?

He used to work under me. He was a branch chief guy that we selected for this, just pulled him out of there to do a couple things. He, one, during the early stages he was one of our site guys over there, our team leaders.

OK, so you were over at—?

At Semipalatinsk. He was one of our team leaders there. He also transported the equipment back. I told you he got sick. That's Chuck. And then later he was our point-of-contact for the On-Site Inspection Agency, so he spent months back in their main office up at Dulles Air Force Base—at Dulles Airport outside of Washington, they have an office complex up there, and Chuck spent months back there because he was our coordinator for when they came on site after the experiment, the Soviets would be coming over, so Chuck was our point-of-contact for the On Site Inspection Agency.

[00:40:00] *What about Gene Young?*

Don't recall him.

OK. Here's a couple of names under test operations division. George Hooper?

George was our on site guy at the control point. He was just one of our employees who worked out there for—

OK, so he would work under you then?

Right.

OK. And Rick Hague?

Rick Hague was in our operations office, yes.

OK, so he would be working under you. Bob Sims?

Bob Sims worked for us, yes.

OK. Steve Ronshaugen?

In our operations. All these guys were in our operations.

OK. John Stewart?

John Stewart was one of our—I told you we had three test controllers? He was one of our certified test controllers, and he was also the director of our test site office; we had a Nevada Test Site office. John was the director, but he was a certified test director. Jim Magruder was the test controller on this particular shot, but for other shots John would be the test controller. So yes, he was one of our employees. He worked for Magruder in the chain. Magruder worked for me and then he worked for Magruder, as all those people did. All of them were part of Jim's organization and operations. You know, if you looked at an organizational chart, you would see some assistant managers.

Well, that's what I was trying to figure out, if there was one.

Oh yes, yes. Yes. Yes. Bruce Church was head of our environment safety and health and Jim Magruder was head of our operations, what's called operations. Then we had a guy for technical support and engineering. Then we had an assistant manager for administration; Linda Smith was that. So yes, there's four or five of them reported to me and then under them they had a bunch of divisions: operations division, that's what most of those are, test site organization, *et cetera*. So yes, we had a regular flow down.

That was what I wanted to visualize, was that organizational chart, so I can kind of get an idea of—everybody seems to know very well what their job is and who they report to, but it's not always clear just by looking at documents.

No, that's correct.

Now, Don Eilers?

Don Eilers was a Los Alamos guy. He's a scientist, and Don was one of the fathers of CORRTEX.

OK. Now was he kind of a head of an agency—?

Not the head. He was head of a diagnostic group at Los Alamos who developed the CORRTEX way of doing things.

OK, so in an organizational chart, would he just report to Jim Magruder as one of those?

Well, except he worked for Los Alamos, not for us.

OK. Yes, but only in the instance of the shot?

Oh, in the shot he would report to Jim Magruder as test controller. But his normal job was he was a senior scientist and engineer at Los Alamos.

What about Jim Boyer? I saw his name a lot.

Jim Boyer was in our public relations office, public affairs.

Did he work under you?

Yes. Two levels down, but public affairs.

OK. And Bob Clark.

Bob Clark was an engineer in our engineering organization.

OK, under you again.

Yes, under Magruder.

Well, it sounds like most of these—OK, under Magruder.

Well, all the DOE people were under me in one way or the other.

OK. I think this one's pretty obvious to you. Bonnie Cabrales.

Bonnie Cabrales was my secretary. Well, my administrative assistant later. At that time, she was my administrative assistant. God bless her, she passed away shortly after she retired, of cancer. She probably was the nicest woman I ever knew in my life.

Was she with you for a long time?

A long time. All the time I was here. Yes. We retired together, just about.

Oh, OK. And then we have a Frances Guinn?

Frances was the one I told you that—she worked for the contractor who then was REECo. Now it's Bechtel. But she was assigned to us as a contractor support person, and she always took care of the visits to the site. She was like visitor control. Tours. During this particular thing, she's the one I told you took care of all the social acts. You know, she would take them to Disneyland. She's the one that did all that.

Yes, OK, yes, Soviet babysitter.

That's what she was. That's what she was. She's still there.

And Linda—?

Linda Combs?

Linda Combs, yes.

Linda was my secretary.

OK, secretary.

And administrative assistant.

OK. All right, now I think we're getting into July.

All these people are retired now, because the years have gone by.

[00:45:00] *Now, you had said something about the Nevada Test Site Planning Board, that it was—I guess they met quarterly and made proposals—*

Yes. It changed its face many times through the forty years, but for a long time it was a very powerful, if I can use that word, planning organization who made recommendations to the manager of the Nevada office on things about the test site: budget items, work items, should we buy a new drill rig, how are we going to split the money, how many tests the labs will do. And through the years, depending who the manager was, that structure changed a little bit, but it was always made up of lab people, made up of other federal agencies, and it was a recommending body to the manager of the Nevada Operations Office on future planning.

Now who chose those people? Did the manager?

A combination. Early days, the labs would appoint members, and very senior people, very, very senior. I remember Dr. Bill Ogle and people like that were members and they were—Ogle was a 1961 *Time* magazine cover. So very senior people. But as the years went by, it became position, of who held a certain position in the lab, [who] would be a member of the planning board, and then I would assign other people to be part of that group. But it was a planning organization and a recommending body about all activities on the test site.

How large was it?

It varied. In the old days, it was as many as twelve, fourteen people. Later it was probably six or eight.

You said they kind of explored problems and also recommended solutions to you.

Oh, they were the people the manager looked to, to have an integrated site plan, if you will. Because again, those sixteen, eighteen organizations at the site, you had to integrate all their activities, their needs. REECo may need a new drill rig. EG&G may need a new trailer. We could only have enough money for one of those. This planning board would look at what is needed for the program to do the tests out there, the mission. This site is a very mission-oriented

site. If you didn't need the drill rig for the mission, we didn't buy the drill rig; we'd buy the trailer. We could look to the planning board to be your kind of people who would integrate all that stuff, because they were going to do the tests, the labs, and then make a recommendation to the manager, and 99.9 percent of the time the manager approved their recommendations.

Now was this a different group than, for example, the Kearsarge Attendance Plan Working Group?

Oh yes. It's a much higher group. The other one was just what we call a working group just to get what we needed for that one event. The Planning Board was more global, for the test site, all activities.

Oh, OK. OK. Well, I saw a lot of itineraries and there were just a lot of things but, well, you had made that comment about the Planning Board and how—

I was a big fan of the Planning Board because long before I became the manager I was kind of the secretary for the Planning Board, and I would put together the agenda and the dates and what things to look at and then who's going to make presentations to the Planning Board. We would have all kind of people make presentations, you know, what were issues at the site. We'd have budget people make budget presentations. We'd have construction people make, you know, I need a new drill rig for these reasons, or I need this, and so I was the secretary for the Planning Board. And so I was a big fan of the Planning Board as a method to integrate a thousand needs into a hundred available dollars.

Well, it seems like it allows a good solid discussion of things?

Well, it did, and these people were incredible. I mean they had the minds of computers, you know, the questions they would ask and stuff, and they never accepted something without asking a lot of questions. When you made a presentation to the Planning Board, I used to be nervous as

a cat because you weren't going to get away with just a presentation. You better *know* what you're talking about because they'd ask you, politely, a hundred questions and you better have some understanding. So the Planning Board was a marvelous—I don't think they use it now, **[00:50:00]** and I think that's a big mistake, but that's my opinion, nobody else's. The king is dead; long live the king, you know. When you leave, you leave, right? I don't even go over there, out of respect, I mean—but I don't think they use a planning board now, and that just happens to be their way, but for forty years we did.

Yes. So it was further back than Ink Gates, then?

Oh, it was all the way back to the early 1960s.

Oh really?

Oh yes. Ink came in 1971, so it was a well-developed process. That's when I was the secretary, back in those days. The director of plans and budget, which I was back then, was the secretary for that.

Oh, OK. Well, I had those questions because I was intrigued that—

Well, yes, it's principally a planning and budgeting function kind of a thing, I mean, as far as their recommendations.

OK. I want to kind of go into August. It looked like there were about 735 people who attended.

Attended what?

The Kearsarge.

No, because they couldn't fit in the room. There might've been in—we had closed circuit TV capability in other rooms, in other buildings, to allow people just to observe what was going on.

Well, there seemed to be a plan for control point one and the fire station and—

Right. So we had closed circuit TV, and since I was in the control room, I never knew how many, many people were in those other places, and a lot of them were just interested people who wanted to watch what was going on that morning, because here we had this collection of people in our control room. There's a picture in here of it [sound of pages turning]. Oh, here it is here. Yes, this is our control room [showing photo] so only X-amount of people could—this is me standing right here [showing photo]. Here's Jim Magruder sitting right there, for example [showing photo]. But then we had all the Soviets in here and, you know, *et cetera*. So in this room there might've been, because of space, forty to fifty people at most, and they were standing room only kind of a thing. But this is for every shot, is what you do, and for every test, and you go through the safety aspects. Up here will be briefers who briefed you on weather, brief you on seismic conditions, brief you on whatever.

Oh, is this where the briefing takes place, is in those windows right there?

Well, you know, they'd put view graphs up on those windows, or they would put weather projections, or they would put whatever. The USGS, the weather bureau, Public Health Service. Public Health would put maps of where everybody that owns a dairy cow in that part of Nevada, where they are, how many dairy cow, *et cetera*, in case there was any kind of a leak or anything. The weather people would put all kind of, you know, they would put the big balloons up in the morning, get the wind directions, and we would get wind updates every minute. So all the briefings would be, these are like TV screens is what they are.

Yes. Well, I noticed on like the itineraries, there was always a place that talked about briefings of one sort or another, and you did a lot of briefings, and I think some of them were public affairs briefings, but some of them seemed like it was to explain what was about to happen, along with some laboratory people—

Up here I would be an observer because my test controller, Jim Magruder, I delegated to him, so he's in charge. So I'm just an observer. I remember one shot we had when we had some people show up at ground zero about a half-hour before a test, and we had a bunch of VIPs from Washington here, and when they heard that these three ladies and a man had walked in from the Nellis Range to try to stop the test.

Oh, the demonstrators.

Demonstrators. Yes, it was three British ladies and a guy from Colorado Springs was their tour guide, and I don't know how, with the sneaks and shorts, they walked through that Nellis Gunnery Range and climbed up there. I mean, that's a rugged, rugged country with a lot of animals. They're fortunate nothing happened. I mean, in addition to rattlers, you have mountain lions up in that area. You have everything. But anyway, I'm standing there but Jim's in charge of **[00:55:00]** everything going on on that site that day. So I'm just an observer there like everybody else, and that was quite a morning, as you could imagine. There's more people to come after that picture [indicating photo] because all the Soviets were in there, the VIPs from Washington. Joe Salgado came in, the deputy secretary of energy came in. Troy was there. And you can go on and on with the whole list. Plus the working people. A lot of working people.

Well, it did attract some demonstrators too, didn't it?

Yes, but I don't recall too much. We'd had a lot of demonstrators for other things, you know, like this week is Good Friday week, Holy Week. This used to be our biggest week for protests, and it probably still is. I haven't read anything this week. But we'd have five, six thousand protesters out at the gate for all week, and they would beat that drum twenty-four hours a day and they would have music playing. For a while there a lot of drugs out there. But they were

protesting the activities on the site, and if they behaved, we didn't do anything. If they crossed the line or stuff, we would arrest—

Put them on a bus and take them up to Tonopah.

Exactly.

I remember this one story you told about Casey Casem and he had some kind of a—

I didn't remember telling all these stories.

Yes. He had some kind of a—

He had a concert in L.A. that night.

Yes, that's what it was.

He didn't make that. He was on a slow boat to Tonopah.

That was one way to take care of that, wasn't it? Oh, OK.

So you listened to all those things.

I did. I did. I wanted to prepare. I wanted to—

Well, you certainly did.

It was good. Tell me about the award you received from President George [H.W.] Bush.

Well, I was half-embarrassed about all of that because, you know, when you're a manager you really do less work than all the people. I mean, you're just a titular head on a lot of things. And everything about Kearsarge and Shagan, so many things could've went wrong and very little went wrong because of the professional work and the hard work that everybody did. And so when I got presidential recognition for leading that out here, it was kind of embarrassing.

Now when was that? You said it was President Bush, but when was that? Nineteen eighty-nine? When was that?

Maybe 1990. Nineteen eighty-nine or 1990. But, you know, I got a nice stipend and I got a big award and I got to shake his hand. Once a year they do an awards ceremony in Washington for federal people who get nominated by their agency, and there might be fifty people or whatever. So I was nominated by the Department of Energy, mostly for this.

Kearsarge. Now what was the title of the award?

Presidential something award. I forget the other word in there. There's a—you know, presidential achievement award or something like that. So I have a nice picture at home with me shaking hands with President Bush, and of course I got a stipend, as I said, a money thing, and then later a banquet where you go with the other awardees and stuff like that. But I was a little embarrassed by the whole thing because I've always been a believer that you're successful if your people are successful, and obviously they were. I probably did the least work of any of them. What I did is approve a lot of things and show up at a lot of affairs. But people like Magruder down, those operating people you just talked about, and the lab people, they're the ones that did all the work.

Yes. But there seemed to be an organization, a tight-knit, high morale. Very high morale.

The test program has always been a family of people. Last week I was at another DOE site that we'll leave unnamed and we were doing a leadership assessment of the current management organization there. And the morale I saw up there, I've never seen anything like it. I did not see this integration with the contractors and the labs that I saw here for so many years. Here you would go into the Mercury cafeteria at night for dinner and there'd be a table of people and you **[01:00:00]** would not know who was a lab scientist, who was a driller, who was a laborer, who was a DOE government guy. You wouldn't know who was who; they'd all be sitting at that same table and enjoying themselves. And that's hard to describe. I always had a hard time describing

that to the people in Washington or at other sites, because you don't see that. And I think I came to the conclusion many years later, the reason for that was we had one priority at this site and everybody knew what the priority was, and there was never any competition for priorities. When you go to other sites, they have [an] incredible number of priorities. If you ask employees, What's your priority? This one tells you different than that. Here, it was to execute a nuclear test. A very important, to us it was, important thing, and everything else was secondary. When people used to come to me, they—in fact, I got criticized a lot. They'd come to be about new things for the test site, I used to say, As long as it doesn't interfere one moment with our primary mission. If you want to go do something in the corner, that's fine, but if there's *any* interference with the mission, we don't want it.

No distraction from the focus.

Everything was focused on the test. And people understood, I think—thought then—that if you didn't work together, it wasn't going to be successful, and what other thing were we doing in this country that had the potential repercussions of a problem with a nuclear bomb? Think about it. No where. I mean, I saw on Channel 10 [KLVX-Las Vegas PBS] last night a two-hour special on TMI, Three Mile Island. You remember Three Mile Island, the criticality problems there? And what a big deal that was at the time. What the governor of Pennsylvania was going through in evacuating pregnant women and children and stuff like that. And a lot of people I knew were in that show last night, that news thing. That was nothing compared. What if a terrorist got a hold of one of our bombs? Or what if a bomb exploded before it went down hole? Or—you know. Because think of the size of experiments we did out here. The Hiroshima bomb was probably eighteen to twenty kilotons. We did *megaton* shots out here. *Megaton*. So, you know, fifty times larger. And so—

There was an urgency, almost life and death?

An urgency of life and death, an urgency about safety, an urgency about security. When I read today in the newspaper comments about DOE doesn't care about safety, that's such nonsense, it's unbelievable. *Nothing* superseded our safety concerns. *Nothing*. Nothing superseded our security concerns. And it was just daily, that's how you did your work.

So it brought people together into a structure that I've never seen in any other universal system, GE, you know, wherever. I've never quite seen that. I used to—probably used the term too much about family. I used to use the term "family" a lot, that we were family. And you don't see that in many government installations, or other installations. You don't see it at university installations. So I was always proud of the thing and I think if you talked to Troy, you'll get the exact same answer that I give you, the exact same words. A lot of the new employees, you won't, only because they're not testing. They don't have that mission. They don't have that focus. They're looking for other work. They've got twenty different priorities out there now, and I understand, because they don't have that mission, but back then we had the mission.

And nuclear deterrence is the most misunderstood policy in America, but I believed in nuclear deterrence a thousand percent. I've always said to think that, if you go back in history, *never* was a weapon developed that wasn't used *immediately* upon your enemies. Bow and **[01:05:00]** arrows, gunpowder, grenades, airplanes, whatever, was used immediately by everybody. In 1945 we dropped two bombs on Japan to end the Second World War. It never was used again after that, despite the enemies. I mean, you think of China, Russia. You can go on and on, all who had nuclear weapons capability, and yet it was never used. You say, well, why, because there was a lot of crazy people. I mean, Khrushchev was crazy, *et cetera*. Stalin was crazy. Crazier. But we didn't use any of it. Why? Because of nuclear deterrence. I think all of us would wish there was no such thing as atomic bombs, but through technology it was going to be

developed. If we didn't develop it, somebody else was going to develop it because it was physics and engineering.

And it was all in Germany.

That's it. Germany and Italy and Russia. I mean, you think of after the Second World War where Russia lost millions of people. Four years later, they tested a thermonuclear bomb. It's unbelievable. So I believed wholeheartedly in nuclear deterrence, and I knew that the [more] strength we had, the more possibility of avoiding a nuclear holocaust. A lot of people don't understand that policy and don't want to understand it, but I did and all our people, as far as I know, did.

Well, talking with Martha DeMarre and some other people, there is a strong feeling and the connection of the part the test site played in helping to end the Cold War. Could you make a comment on that?

Well, like I say, the Cold War, the definitions of the Cold War, are different in a lot of people's minds, and you can go back and look into the history of what really started the Cold War. I mean, was it Bernard Baruch's talk at the United Nations where he talked about it, or was it Churchill when Churchill says that a curtain has come down, or was it when Truman says, Wait a minute, I mean, the Soviet Union, we've got to do something about this and we've got to put troops in Europe, and you know, *et cetera, et cetera*. [Historians have often used these happenings as the "official" start of what became known as the Cold War.] So there's a *lot* of things, but I think the most significant thing that happened is the Soviet Union developed thermonuclear capability that equaled ours, at least in numbers. Maybe not in reliability or safety, but in numbers of power it did. So to me that had so much to do with the real Cold War. There were other aspects of the Cold War, obviously, but I think once we started

getting the Soviet scientists and our scientists together, once we started trading data like the JVE, once we started entering into those kind of treaties, that was a significant door-opening to the process of ending the Cold War.

They seemed to be ready, too, for western technology because of some of the problems they had run up against.

It was only so long that people could suffer when they see everybody else in the world is progressing. I mean, you think of the 1950s and 1960s, how terrible it must have to been to live in the Soviet Union. Just terrible.

Well, they had the Chernobyl accident too, and it seemed like that brought out some things that the people over in the Soviet Union were—?

Well yes, because they built that reactor in a gerry-rigged style. There was no containment. They used a graphite moderator for the reactor, and graphite—the lead in your pencil—will burn if you get it to enough temperature. And so when people compare our reactors to Chernobyl, I say You're comparing an apple and an orange here. They use graphite moderation; we never would do that. Their safety issues are totally—there was no containment, no nothing. If you remember at Three Mile Island most of the problems were contained. There was the theory of the hydrogen bubble, but it was all contained. They were able to leak off that hydrogen bubble. But I think when things like Chernobyl happened, when starvation happened, you know, Stalin starved so many people to get the food to his armies, millions of people died.

Mind of oppression.

Oh my God.

[01:10:00] *Yes, mind of oppression.*

And then now you're seeing the rest of the world is starting to enjoy themselves. People will only put up with that for so long. I don't understand how places like Iraq and Iran—someday that will burst too. It's a strange thing. But I do think this site contributed its fair share to the end of the Cold War.

At least they kept things going while the Soviets outspent themselves.

Well, that's right. I'm a little concerned about the general public's short history and not understanding that sometimes there are some problems when you're fighting a bigger problem. Yes, there is contamination out at the test site. and yes, there might have been some in the early days of atmo—we did a hundred atmospheric tests out here. There might have been some downwind problems. My wife says I sound too cynical about this, but sometimes a few people have to suffer for the benefit of the whole country, if that makes sense. At the time, we thought we were going to nuclear war with the Soviet Union, in the 1940s and the 1950s, and so you could argue that all it would've taken—I don't know where you were in October of 1962 when the Soviet Union went into Cuba with their missiles and their delivery systems. President Kennedy put the blockade around Cuba, and they stared at each other in the eye, and fortunately Khrushchev blinked. And there was a lot of other compromises done. We pulled some stuff out of Turkey that we were going to do anyway. But all he had to do was if *one* idiot over there—Khrushchev was idiot enough to fire *one* missile into Miami, ninety miles, *millions* of people would've been killed or maimed or whatever. *Millions*. And we came close to that, I mean, I think a lot closer than people really understand. I don't think our CIA [Central Intelligence Agency] understood their capability until after the Cold War and people looked at records and stuff, over at the KGB records, realized the delivery systems they had in place and the fact that they had loaded nuclear weapons over there.

In Cuba?

In Cuba. And I got out of the Army that week, the week of the Cuban blockade, and I was sure I was going back in because that's when we put the blockade up and that's when they were staring at each other and the Russians were saying, You better not touch one of our ships. We're in open seas. And President Kennedy had a lot of important decisions to make, and I sometimes think Bobby Kennedy was running our country. But that was an interesting, close call. But we prevented nuclear war. So people now complain.

Do you have any opinions on the Reagan handling of the Soviet Union?

Oh, I believe he was the right man at the right time. He stood up to them and called them the Evil—he never said their name without saying `The Evil Empire`. So he developed a mindset, I think, in America, properly so, that they were the Evil Empire, and I'm just kind of glad that—I shouldn't say that. I was going to say, I'm kind of glad Jimmy Carter wasn't the president at the time. Because Reagan just stood up to them. He just said, `You're the Evil Empire and this is the way we're going.` And I think he called their bluff. And fortunately they had the right guy over there.

Yes. Gorbachev.

They had the right guy there who gave a speech here in town last week.

Yes. I attended that.

Did you?

I did.

I was out of town or I would've. Did he do all right? Was it a good speech?

It was a good speech. Yes.

I would've enjoyed that.

I've been very interested in how history has mistreated Reagan myself.

Oh, well I don't think it's "mistreated" as much as some people would've liked to try to mistreat **[01:15:00]** Reagan. I think there are a lot of, *lot* of people like Troy and I, and I can tell you a lot of others, who respect the man for what he was, the right man at the right time. And I keep telling people, you know, people say, ah well, he was an actor, he was this. That don't matter. He was a leader. He was a leader. People to this day say to me, How were you the manager of the Nevada Operations Office, because your degree is in sociology; your background's in business.

I wondered what your background was.

Oh yes, I graduated [in] sociology. I went to work at the test site for the contractor, REECo, in 1962 after I got out of the Army, right after the Cuban blockade, and had all these, what I'll call "management-related" jobs, and became the manager. I don't think that could happen today. There's this aura today that unless you're a technically competent person, you can't be a manager. Well, I feel just the opposite. You *hire* technically competent people. In this place I was last week that I mentioned to you, that's their key problem. They have a bunch of technocrats at the top that don't know how to touch a person at the bottom. I'm not bragging about myself, but you go to the test site now and go in and ask the cooks who Nick Aquilina was and they'll laugh and tell you that he used to come in the kitchen and kid with them. You get a lot of technocrats won't touch people, and to me that's a big problem. I think you need leadership at the top, and that's what Reagan was, to me, was a leader. Jimmy Carter was a nuclear engineer, but I didn't think he had leadership qualities, but that's my opinion.

Not willing to make decisions?

Yes.

Can I ask your opinions of how the test site fared under Clinton?

Well, he came in in 1992.

Nineteen ninety-two, yes, just a couple years before you retired.

The last test we did was 1992, just before the election. September 23, I think, the Divider event. And so he was never president while we did any tests. So the impact we felt from him was that we didn't test anymore. But we didn't have any other major impact from the Clinton era and then I retired.

Yes. Although Troy Wade did go to Washington, D.C. and gave testimony in front of the Congress and the Senate on the total test ban—

Right, on the Comprehensive Test Ban.

Yes, but he was concerned that as it had been changed, that it would create problems for the stewardship program.

Oh, no question about it. But Troy went in as an individual. He wasn't working for anybody then. Paul Robinson with his Sandia hat on went in and gave the major anti-testimony against it and really disturbed the then-secretary of energy, who is now the governor of the state of New Mexico, because that wasn't supposed to be the line; they were supposed to support the president because Clinton wanted a—

A total test ban.

A total test ban, but Paul went in and gave testimony against it.

And they didn't ratify it. They didn't pass it.

They didn't pass it, no. No, it was not ratified at all.

So you can still do some stewardship-type—

Well, we could've done that under that too, because they weren't considered nuclear. They didn't meet the criteria.

[01:19:15] End Track 3, Disk 2.

[End of interview]