

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

Interview with
Charles McWilliam

January 11, 2005
Boulder City, Nevada

Interview Conducted By
Joan Leavitt

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

Joan Leavitt: *OK, I am here with Charles [Chay] McWilliam, and I'd like for you to start by giving me some of your background information. Maybe you could even begin with your father and mother?*

Charles McWilliam: That's going way back.

Well, leading up to the [Nevada] test site.

I grew up in southern California. My father was from Scotland. He had been in manufacturing his whole life at different companies in southern California.

So was your father an immigrant?

Immigrant. Yes, he was an immigrant.

Oh, a Scottish immigrant.

Oh yes. He had lots of nicknames, like Scotty. Long story, but he basically got kicked out of his house at fourteen and came across on the boat from Scotland to Canada where one of his sisters lived. Then into the United States as an immigrant, and went through - he used to tell me all the time - learning the Constitution by heart and all these other kind of things that immigrants don't do anymore. But yes, he was an immigrant and was very proud to be an American.

My mother grew up in North Dakota, in the cold country, and had moved to southern California, where she met my dad.

[I] basically grew up in Orange County, California—

You were born in California, then?

I was born in California, yes. Beach boy.

Warm weather, then. Did you have any siblings?

Yes, one older sister and two younger brothers.

OK. And you went to school and pretty much grew up there..

Yes, went to school and grew up there. By the time high school came around, I went to technical high school, Don Bosco Technical Institute, because I was a techie from the beginning, and then went to Cal State [California State University] Fullerton, majored in mechanical engineering, and when I came here to work at the test site, I went to UNLV [University of Nevada, Las Vegas] and got my master's in business administration.

Oh, Jim Magruder did that, too.

Yes. He was doing it the same time I was, as a matter of fact.

Is that where you met him?

At that point, yes, it probably was where I first met him. And I think he was still working for EG&G [Edgerton, Germeshausen, and Grier] then. So yes.

And what area of the test site did you start out with?

I started out in the forward areas in nuclear testing. At that time, it was called the Test Construction Branch.

What year was that?

That was 1974.

OK. Test Construction Branch. So that's preparing the test site, then?

That's preparing the test site, approving the drawings and work orders, and so forth to actually do the—

So working with test directors?

Yes. Working with the labs and the contractors and making sure that the contractors were doing what needed to be done to conduct the tests.

OK, and you did mechanical engineering and then you were into the construction?

Construction, monitoring the drilling. Even though we had another drilling engineer that did that, we had to bring it all together to drill the hole, get the geology, put the diagnostic rack together, put it all down the hole, cover it all back up, and be ready to conduct the test.

And how long did you work there?

In Test Construction, I think that was about three years.

And then what did you go into?

And then I moved over to the Logistics Branch at the time.

Now would that be under Jim Magruder, then?

No, that was under—Joe Dryden was the branch chief at the Logistics Branch, and what I took over was the maintenance of the test site, so now I was maintaining the water wells, the roads, the power systems, everything that it took to be ready to do the testing, to support all the testing operations.

So you became really intimately familiar with the location of the test site, then, didn't you? I mean that sounds like that was your work spot.

Yeah, the test site was my baby. Yeah, that's a good way to put it. And so I moved up. The Logistics Branch ended up taking over a lot of the construction, the new construction going on, and then, again under Joe Dryden, [I] became branch chief of the Logistics Branch. So now I've got all the funding for the test site, the maintenance, the running, the buses, the cafeterias.

Everything it took to keep the test site operating.

Now are you working under the director of the test site then?

The director of the test site at that time, Joe Dryden, was now the director of the test site.

[00:05:00] OK, because sometimes these job descriptions are confusing. You've got the manager of the test site and then you've got the controller and the test director. It's kind of mind-boggling to —

Bring it all together. Yes, it is.

Yeah, to bring it all together. So how long, then, were you branch chief?

Oh, how long was I branch chief? Let's see, I must've been branch chief four or five years by the time JVE [Joint Verification Experiment] came along.

OK. So then you were under—was it under John Stewart at that time of the JVE?

No, no, when JVE came around, it was Vern Witherill .

OK, so you were under Vern Witherill.

Yeah. Joe Dryden left to become the director of the PASO [Pacific Area Site Office] office in Hawaii. There was a couple of short-timers, and then Vern Witherill came in and was the director at the time JVE came along. He spent a lot of time in Kazakhstan directing the operation there. While he was gone, I would be acting director of the test site. And I'm directly under Magruder at that point.

OK, and so Jim Magruder was located—?

He was downtown, in Las Vegas, yes. He was the assistant manager for operations, AMO.

OK. And then when Vern went over there, you took on a number of additional responsibilities.

You volunteered—

Yeah, too much.

Yeah, you know, maybe we can just list out some of these things, because you were branch chief and then you were chief negotiator.

Just during JVE, yes, I was chief negotiator *and* director of the Nevada Test Site. Now what *should've* happened is we had a division that was downtown that was to deal with the JVE. John Stewart *should've* been the chief negotiator, but didn't want to go to the test site every day.

Do those three o'clock meetings and spend a lot of time out there, and so I volunteered to do that and we went ahead.

Yeah. OK. Now let me go ahead and get some of these questions—

Questions answered? Is that enough background before you go on?

Yes. That helps me because you had said you had a picture of the overall picture and I kind of wanted to just add in how you got that overall picture and some of your previous experience for that.

Now when Viktor Mikhailov came, you had said that you were really concerned about his health, you know. Could you kind of describe a little bit of what you saw and how you tried to take care of that problem?

Well, what we saw and what we were getting feedback through the interpreters was that—and we had our own medical facility at the site, so he was going in and getting - Blood pressure was through the roof and smoking like crazy, and we were afraid at that point that we were going to have a health problem. He was under a lot of pressure not only from his own side but from the intelligence side of his country to be successful.

And to also, wasn't it to guard that maybe the United States was going to try to set him up to fail? Did the interpreters express any of that?

I think that was just in their culture that they were warned that the U.S. would set them up to fail.

I think we were able to assure him enough that that wasn't the case, that if he failed, we failed.

And so I think once he believed us, that everything kind of straightened out. And—once we took off the intelligence threat he had—made him in charge indirectly.

OK. So this is where Alex Shmatov came in. Why don't you describe the problems that you were running up? Because you were having three o'clock, three, three-thirty meetings with him every day to work through various details. Describe the problem you were coming up against.

[00:10:00] Alex Shmatov was making the move that *he* was in charge and undermining the interface we were having with the technical people, which Viktor was leading. And what finally brought it to a head was the fact that we had a[n] issue with keeping Americans out of a room that was storing some of their equipment. A security seal was broken. And so instead of bringing it up in our meeting, Shmatov took it right to Moscow and it came around through channels that it didn't need to. And so at one point, in one of those three o'clock meetings, I had to embarrass Shmatov in front of the group.

How did you do that?

I basically scolded him for sending that to Moscow instead of bringing it in the meeting.

And that was sufficient to embarrass him.

Oh yes. That's all it took.

He lost face.

He lost face, and from then on Viktor was in charge.

And did Shmatov leave shortly after that?

It was a few weeks after that, but he was in the back. He was no longer sitting at the table. He was in the back scenes, and he was no longer interfacing with the Americans as being up front.

And it seemed to take a lot of pressure off from Viktor, then.

Yes. Even though now he was in charge and had all the responsibility, he didn't have somebody looking over his back constantly feeding back to Moscow what was going wrong.

Now I understand that for many of the Soviets, it was difficult for them to make decisions. They always had to check with somebody else. Did Viktor have that kind of a problem?

No, Viktor didn't have that problem. He was a capitalist, even though he wouldn't admit it.

Now describe what you mean by that because that was something that you commented on before.

It was actually one night after we had received some more of their delegation in on the airplane.

It was midnight, one o'clock in the morning, and we're drinking vodka and eating bacon, which is lard, but they call it bacon. Anyway, and we just had a discussion of, you know, I'm a capitalist and he's a Communist, and I kept telling him, No, no, you're not like the rest of the people. You make decisions.

Oh, and that's what you were saying a capitalist can do, is to make his own decisions, and that is the reason why you called him a capitalist.

Yes. He could make his decisions.

He could think for himself.

Right. And take the risk. Take the responsibility and the risk of if it doesn't go right, he's the one that's hung out to dry. Where most of the other Soviets would never do that because they would be pushed aside.

Oh good. I'm glad you explained that. Now another thing that you had said, and I was trying to figure out, if this was an interpreter who relayed that the Soviets had the impression that Americans were baby killers. Tell me where that came from.

That came from the interpreters, that they were afraid of us. They just had in their mind that we were really mean, bad people.

Now did this have to do with the bombing of Japan?

Oh, I think they could come up with any number of excuses or reasons, but I think I told you the history book story, that they were so brainwashed, especially this group that had never been outside of the Soviet Union [USSR]. They were brainwashed into thinking that we were always against them. Way back to World War II, we were against them. We were the bad guys. We were with Hitler in attacking them.

So there was a pervasive suspicion and mistrust.

Right. And in their own culture, that was the way they were brought up - put up a front that was phony. And so it took them a while to get to believe that we were real, even after meeting with them.

[00:15:00] *This coming face-to-face with other Cold Warriors and maybe even seeing yourself through their eyes, you probably had a lot to think about that, didn't you?*

Oh yes.

Did you see your own suspicions and your own mistrust a little more clear?

Yes. I often questioned after JVE was over and spending time in the Soviet Union during implementing the treaty whether or not the whole Cold War was just blown up by leaders to build up the military machine.

Did you think that was true for the United States, too?

Yes. That's certainly a possibility that the leaders agreed we're going to make mistrust. We're going to build this mistrust amongst the people and we'll both play the game. Whether that's true or not, we'll never know.

You wondered sometimes if that might have been a national conspiracy propaganda—?

Yes. After seeing what they had and just seeing their military vehicles in operation. We have this concept that the Soviet people were tough, really brutal, just like they had of us, especially in cold weather. Now, I saw them turn into wimps in cold weather, and I'm going, These aren't

the tough people that we say beat the Germans because they were used to the cold weather or they were so tough in the cold weather and the Germans weren't. It just wasn't there.

But if you can't get up close and personal, how do you—?

How do you know that? Yeah, that's right.

It's kind of like the Iraqi Army with Saddam Hussein was reported to be one of the most fierce.

Yes, till you get on the ground, you don't know.

Yes, until you get onto the ground. It just seems this was a great uncertainty, and if you were wrong, you didn't know that.

Yes, the risks were really high to be wrong.

Can you tell me the details about what you were aware of, of the drilling of the hole over in Semipalatinsk? Did they foresee this? From your personal interaction with Viktor Mikhailov, did you perceive that this was going to become a problem?

Drilling the satellite hole over there?

Yes.

I don't think they realized it was going to be a problem, until they tried to drill it and they couldn't get a straight hole, in which case—and this had to be hard for them to do because they normally didn't do this—asking *us* to come over and drill the hole to see if *we* could make a satellite hole to parallel their emplacement hole.

Now you had said that you were also in charge of the support for the people over there.

Right.

So what kind of feedback were you getting from Semipalatinsk about this hole?

Almost daily feedback, and a lot of it having to do with the problems they were having—our team was having—drilling.

Was it because of the geology?

A lot of it having to do with the geology. The rock was harder than we anticipated going over, or had been led to believe. When we got there on the ground and started drilling with what *we* brought - because the equipment we brought was based on what we were told - found out we were burning up bits just right and left, and then had to ship over diamond bit core barrels. Then we had to cut them in half because they wouldn't fit on the airplanes. I mean that was a long story. So yeah, we had to ship over new equipment, and even *those* didn't work as well as we had thought. So there was a lot of unknowns dealing with—

Even going over there and taking U.S. technology.

Yes, because any time you do that, you do it based on the information you have, and the information we had wasn't correct.

And you got that information from the Soviets?

From the Soviets. Either *they* didn't know what they had, which is probably what it was, or there was something lost in the translation. I think I'd mentioned this before, that it was really difficult to find [00:20:00] translators or interpreters for this treaty because it was so technical. Very few. I think I could say we had maybe two on our side that were really good, and one really good one on the Soviet side.

[Michael] Farafonov.

Yeah, Farafonov.

Yeah. Now Fred Huckabee had said that Farafonov reported right back directly to [Mikhail] Gorbachev, that he was keeping Gorbachev informed about what was going on with the JVE.

I don't know if that's really true, but he had been Gorby's interpreter at some point, so whether he was still reporting back to him, who knows?

OK, now in your transcript there was something that you said - and I hope I'm not skipping ahead too much - but you had said that once the post-JVE was going on, that Troy Wade had wanted Jim Magruder to take some job that Jim didn't take. Tell me about that. What happened there?

I have to back up because you need to understand the interagency arena and what goes on in Washington. All the politics that gets played and the empire-building that happens between the various agencies. During JVE, DOE [Department of Energy] had the lead. It was our tests and it was our test site and we were in charge. So most of the negotiations that went on assumed that we would still be in charge once we started implementing the treaty. During the JVE, there was a lot of jealousies from DoD [Department of Defense] and the intelligence community.

They wanted to be in on it, too?

Well, they were in on it, but they wanted to be in charge of it. And so during negotiations, as far as the number of people that would be in the party that would go in to do the monitoring of the tests, there were numbers set restricting how many could go in. Well, we had DOE in charge and DOE people on the ground. We gave up a couple of slots for the intelligence people because we figured they would be there, but we didn't plan on having any DoD slots. And so although these were all negotiated with interagency meetings first, which included DoD, [Department of] State, ACDA [Arms Control and Disarmament Agency] at the time, intelligence folks, were all in on these negotiations. When it came time to implement, DoD stepped up to the plate and said, No, we'll be the ones in charge. And at that point, Troy Wade had an opening in Washington for the guy to head up the negotiation team or the treaty responsibility and wanted Jim to take it. And Jim would've been ideal at it.

Because Jim had all of the appropriate background and would've protected DOE.

He had the background and he had the energy. He would have—yes. They wouldn't have stood a chance. So it ended up going at that time in the interagency arena. It ended up everybody voted to give it to DoD because everybody was mad at DOE or jealous of DOE at the time for having got to do this wonderful thing. Of course, that's one man's opinion.

And then Jim retired shortly after that?

Oh no, it was a long time after that that Jim retired. So he had to live with his decision.

Was anybody else as mad at him as you?

No, because I'm the one that had to live with it, too.

But you knew that made your job a whole lot harder because there wasn't a person like Jim there.

Right. Right. There wasn't a person like Jim there. The person that was there had no loyalties to DOE and had more political aspirations than defending DOE in our operations. So the real problem with us was we had people now leading the group that knew nothing about it, knew nothing about the treaty, had no technical background, *and* they took up some spots that we could have had technical people in.

Yes. That you needed for verification-type people, and if all they are is just extra—
Figureheads.

Extra figureheads, then that creates more of a work burden on people who actually have to do the—that's really interesting.

[00:25:00] *Now you had said that the Soviets tried three times to drill the hole?*

Yes. I don't know if it was three times, but they tried a number of times to drill their hole and could not get it to parallel the emplacement hole, and that's when they finally asked—

Well, it sounds like they really, really tried to make it work, though, didn't they?

Yes. They did. They just didn't have the, I'll say the technology, but a lot of it is the know-how and the experience to do it, and so they said, You guys can come over and try.

Yes. Now there was the story of the U.S. flag-raising here at the test site, and you had kind of said that that really made you mad. Tell me about that.

Well, it wasn't that it made *me* mad. It made Nick Aquilina very mad.

Yes, Fred Huckabee said that, too.

What it did for me, it was really a trauma, I guess, because I grew up as a kid through the Cold War, and I can remember watching the news on TV and [Nikita] Khrushchev beating his shoe on the table in the UN [United Nations], saying, We're going to bury you. So you know, it really didn't hit me, at least emotionally, who we were dealing with until that Soviet flag went up on my test site. Remember, this is my baby. I was acting director.

You were acting director at the time. Do you know what month this was? March? April?

No, it was later than that because there was no snow on the ground.

Did they warn you they were going to raise it, or did you get told that that was—?

Oh, I was all involved with the raising. I knew what was happening and the national anthems and all. We put all that stuff together. You ever try to find the Soviet national anthem here in America, on tape? That was fun.

Oh, so you had to put together the ceremony?

Yes.

Now did the Soviets hear about the flag-raising over in the Soviet Union and so they said, OK, we want to do that, too?

And they requested it here. And part of all this negotiating is reciprocity, so if one side does something, the other side's supposed to get to do something. That's why Nick was really mad at Vern for raising the U.S. flag over there.

What did you just start?

Yes. And I'm sure he had to go through the same emotional trauma, raising that flag on the test site, too.

So you had to set up that ceremony and you had to watch it go up. Troy Wade says that in January when he was about to take them out to see the test site that's when it emotionally hit him. It sounds like it emotionally hit you when you had to put that flag up.

Put the flag up. Oh yes.

Now what did Nick say to you about this? Did he say anything?

Yes. Only that he didn't want to do it and he was mad about it, and I'm sure Troy was telling him, You have to do it.

Did it feel like they won? In fact we lost the Cold War?

Sort of. There was a smirk on their faces as we went through that, but no, I mean, we got over it, so it wasn't almost like they had won but that's kind of the feeling, the emotional feeling, you got from it.

Yes. Now I think you had said that before this happened, the drillers had done some painting of the drill rig of red, white, and blue.

Actually in the January visit when Troy brought them out. This might have been what hit him.

They were touring through the drill yard to see the size of our drill bits and our equipment and so forth, and the drillers had painted the drill bits red, white, and blue.

Now there are pictures.

Now remember, these are normally rusting old pieces of equipment that are painted bright red, white, and blue.

Well, there's that great big huge one that is painted blue. Was it blue before?

No. It was red, white, and blue when the Soviets visited.

So it was painted that color at that time, then?

Yes. Just for their visit. And you know upper management didn't know this was going on.

You know, that makes that drill bit picture even more interesting.

Oh. Yes. When you understand that nobody told them to do that. The drillers were told, well, spiff up the yard, clean it up. And they painted it red, white, and blue on their own. So they were sending a message.

[00:30:00] *It was a real shock to the Cold Warrior, wasn't it?*

Oh yes.

Because they were Cold Warriors. They had a sense of pride in their work. They felt like they were defending their country from the Soviets, and then who comes on to the test site but the Soviets?

But the Soviets. Yes.

And even people who weren't intimately involved with the Soviets had something to say about that.

Yes. Well, I think I told you the last time that there was a lot of concern for Soviet safety, and part of the guards around them were to protect the Soviets.

Yes. Now when did the implementation start and what happened with your career after the JVE?

You had said that the Soviets had called you their "bear," that you had been kind of the one in charge and they had kind of looked to you—now tell me what happened with you, because we got you through Shagan and we got you back after you had been ill—

And then I went back in again and came back out again.

After Shagan?

Yes. After Shagan, we're trying to figure out how to get the equipment out of the Soviet Union now. We, on site, figured out how to do it, but in Geneva they—again, the Soviets were so afraid to make a decision - they wouldn't, and finally after Shagan—I think we had been there six weeks—Magruder said, *Hey, come on home, you know, they're not going to make a decision yet.* Two weeks later they did, and what we finally decided—we were trying to get them to put everything on a train, take the train to Vladivostok and up to Nakhodka and—
Well, you had said you saw the train and the train was big enough to carry it and you couldn't understand why they couldn't have done that.

Why they wouldn't do it, yes. The Soviets just would not make that decision, even with the head of their transportation department there. He would not take that risk with the drill rig. We got everything else on the train, but they wouldn't do it with the drill rig. At that point, that was a million-dollar piece of equipment and to them that was an awful lot of money.

So you had to take it along the road.

We went back in again, and this was a two-week trip, a lot of jet lag, and went into Kazakhstan and we prepared the drill rig, drove it from the test site. Oh, what's the name of the city now?

Anyway, into the airport, which is about a twenty-mile drive—

Nakhodka?

No, I can't remember that. Because after everything opened up, they changed names. Anyway, - and loaded it on the drill rig at midnight, and then the weather was bad. It was snowing and cold, and it took us so long to get it on the plane that they couldn't take off and we were stuck doing it the next day. Couldn't get a hotel room. The General couldn't get us into the hotel, even though the hotel was empty. So we had to go back to the test site, and then the next morning, got up and flew the drill rig from Kazakhstan to Vladivostok. We got in *there* at night and ended up driving

the drill rig over the mountain roads from Vladivostok to Nakhodka. And so the next morning, we finally got into Nakhodka and parked the drill rig in a fenced, secure area, waiting for the U.S.-flagged ship to come in.

Now you said you had had pneumonia, and that you went to one of their hospitals or hotels, or I guess their hotels were called hospitals or something like that.

Well, they're hospitals—

But it was totally substandard.

Yes. And actually they had two hospitals in Nakhodka. One is for people that they say are going to die, and the other one is for people that are going to get well. So they make that choice up front.

So you don't think much of their medical system, then, their socialized medicine.

No.

That probably gave you an eyeful, wasn't [didn't] it?

Oh yes, it sure did.

You described the living conditions of one of their doctors.

Yes, just deplorable. Their doctors were just below trash collectors. That's kind of where they fit in the social ladder.

Yes, and rather than get medical care through that system, you waited till you got on board.

Well yes. Well actually they gave me some stuff, but the next day our ship showed up and so I [00:35:00] went to their medic, who was better qualified than the doctor, and got some antibiotics and cured it.

Boy, it really gave you an up-close look at the social system.

Oh yes. Big time.

You know, compared with the capitalistic system, that the benefits don't come out as—

Well, there are no benefits. When you see what it does to the people, the worst thing you can do to a human being, -and this is what I learned from being in and out of there, -is meet their needs, because now they have no reason to excel; they have no purpose in life; they lose all happiness. It was so depressing being over there, and everybody you talk to that was there will tell you the same thing. After being there a month, they were so depressed, they couldn't wait to get out.

Well, Patrick Rowe had talked with one of the Soviets who said that essentially their Bill of Rights was that everybody had a job and everybody had a roof over their heads.

Yes, that's probably pretty close. It may not be much of a roof.

And it might be shared with several families.

And they have no way of getting better. No matter what they do, they can't get any better because that was their position in life.

They can't improve themselves.

Their lot, yes.

I guess, unless they went into the arts, ballet, or sports, or something like that.

Or nuclear testing.

Nuclear testing was a way up.

And it was a lot of who you knew—even more so than us—that determined how you did.

Now you had a lot of opportunities to have conversations with Viktor Mikhailov, didn't you?

Yes.

I was interested in how he talked to you about being a young boy, losing his parents, fighting the Germans. Did he tell you anything else? I mean those were really, really one-on-one details.

Yes. That seemed to have been the biggest mark on him- was as a kid running through the forest, fighting Germans, in the winter.

Did he say who raised him?

He didn't. He never said who raised him, but I'm assuming it was another family member. That somehow he must have exhibited the fighting ability during the war - that somebody said, we want this guy moving up in the defense department or something.

Yes. Well, the intelligence to go into nuclear testing.

Yes. And the drive. He had to have the drive to—capitalism, the drive- or the ability to recognize that if he does good, he's going to move up, that nobody else in their system did.

Yes. Now you got to see him again several times after the JVE.

Right.

Now one of your pictures shows you in Viktor Mikhailov's office. Now was that in Moscow?

I assume we're sitting around a table?

Yes.

Yeah, that was in Moscow. We were the first Americans to be in—and at that time, he was Minister of Atomic Energy, so he was like our Secretary of—

Yes, I think he's still that.

No, he got demoted after that.

Oh, he did.

When was that? Anyway, actually at the ten-year reunion, he was no longer Minister. He had moved aside. He was still at that level, but they had named somebody else to be Minister for political reasons, because Viktor wasn't very political. It was, This is the way it is. It's black and white. So they brought in—again, their climate was changing, becoming more

political, so they needed a political secretary. He was still in charge of all the technical nuclear weapons and nuclear industry.

Did you see him mellow from being a hawk to being less of one? Because he wrote that book, I Am a Hawk.

Yes. And actually when did we get copies of that?

Nineteen ninety-six.

Yes. And I'm trying to think where we were. But anyway, yes, I think he mellowed. At least he mellowed toward the U.S. I think he would still be a hawk to defend the Soviet Union, but not so much—and he still wanted the Soviet Union. He didn't like the collapse. He didn't like any of [00:40:00] that that ended up happening. And it had to be hard for him when after the ten-year [reunion] we went back to Kazakhstan and it was no longer the Russians' test site. It was Kazakhstan's site. And I mean he was really depressed because everything at the facilities were all run down just in that time that they had been out, so that had to be—

Oh, so Kazakhstan didn't become part of the Russian Federation, then?

No.

So did they continue to do nuclear testing or did they just stop doing it?

No. There was no more nuclear testing.

OK, so that was probably one of the reasons why they didn't do it, is because they were no longer a united federation.

Yes, and it was a few years later that they actually split, so they had gone in there to do—how many did we do? We had actually gone to do a coordinating group, two coordinating groups, back in Moscow.

Your picture said 1993.

Yes. And that was one. And we did one in '91 also, so there was actually two coordinating groups in Moscow.

Now what were you doing in those coordinating groups?

That was part of implementing the Threshold Test Ban Treaty. Before you went in to monitor a test, you had a meeting with the other side to decide what you were going to do, what rights you were going to implement, what equipment you were going to bring, and negotiate the schedule.

So what test was 1991, then?

I don't remember. All I know is I came back from my honeymoon and was told I'm going to the Soviet Union.

So both of those, then, would be before two different tests then? Because—

Actually that was '93, you're right, that was '93. And then when was the other one? Ninety-five?

I don't remember now, but there was at least two we went over there on, and then a number over here.

So joint verification didn't just happen in '88.

No.

It was ongoing for a little while.

Yes. JVE was just to help both sides determine how the Threshold Test Ban Treaty would be implemented. And then from the JVE, we developed the protocols that the president signed to implement the Threshold Test Ban Treaty. The Senate then ratified the treaty because now we had protocols and they knew that we could do it because we had done the JVE. So after JVE, things went back to Geneva. We went back and did a couple of other technical meetings.

I think Divider was one. Divider, I think, was one JVE, and I think there might've been one other. I think it says in the list.

Yes. I think there had to be three or four or five tests that they came over on, and sometimes they were doing full blown and other time they were just doing geology.

Katie McWilliam: Didn't they come on three?

Charles McWilliam: At least three.

Katie McWilliam: That's all I remember coordinating groups for.

There was three of them?

Charles McWilliam: At least three. And then we went over there for two and were talking about a third. The tests never happened. None of those Soviet tests happened. I think the third one would've been in Novaya Zemlya because at that point we were talking about having guards with AK-47s walking around with us everywhere because of the polar bears.

Katie, I think, had said that she was there within the time that the Soviet Union fell, in Moscow.

Yes. We were actually at a coordinating group, and we weren't there at the time but the next week—

Katie McWilliam: The day after—no, the day after.

Charles McWilliam: Or the day after we left.

Now was that the same group Joe Behne was in?

Yes.

Because I remember he said that they seemed very anxious to work very, very fast and very, very hard and—

Right. Which isn't like them.

Yeah, which isn't like them. And Joe said he didn't have a problem with this because that just meant they'd get to go home sooner.

Right.

And they finished up and then the Soviet Union fell.

Right.

So he felt like they knew something was going to happen and they needed to get this done.

Yes. Could be. They wanted us out of town before—

What was your job description then with these coordinating groups?

[00:45:00] At that point, I was director—I need to go back and give you some history of how this happened, because after JVE I went back to my job as branch chief of the Logistics Branch, They formed a new division which was called the Verification Management Division, and Guy Allen became the director of that, and he started filling positions and he had an opening come up. I talked to Jim [Magruder] and I talked to Guy about filling it. I think it was chief scientist or something to that effect, so I took that position, and one of the promises I made Guy was, I'm going to stay in this position for a couple of years anyway.

Well, a few months later Jim comes to me and said, The director for Test Operations Division's opening up. Would you apply for it?

So I said, No, because I told Guy I wouldn't, I'd stay for a while.

And he said, Well, I'll talk to Guy. You go ahead and apply for it.

So he was Guy's boss, too, so I went ahead and applied for it.

Now were both jobs onsite at the test site?

No, I had left the test site now and I'm downtown, first time I've ever left my test site.

That really was your baby, wasn't it?

Oh, it was. It was. Didn't realize how much till I was gone from it.

Well, that's marvelous that this seventy-mile commute doesn't get to be that big of a burden to you, at least in that way.

No.

You really loved your work, didn't you?

Yes, it was fun. It was a good—and it's hard to define the teamwork that went into it. Even though every day there's battles of wills and who wants what, but everybody had the common goal, and you don't find that very often.

Did the DOE administrators stay in Las Vegas or did they interact with the people who were at the test site?

Very little. Most of the NVOO part [Nevada Operations Office] which was downtown, and then the Nevada Test Site Office was just one of those divisions—

Oh, NTSO, then, is onsite—

Nevada Test Site Office.

OK, and NVOO, then, is the office in Las Vegas.

The big overriding organization, and depending on who the director was, the Nevada Test Site Office ran the test site, and the administrators downtown made sure we didn't waste the money. We had seventeen people at the test site and then we had two hundred downtown supporting this, is what we used to say.

I'll bet you did feel that way sometimes, didn't you?

Oh yes. But the other thing you have to look at, DOE/NVOO was unique in that we were involved with what happened. We basically managed the program. No other DOE office did that. Their contractors managed the program. Even the lab guys didn't realize it until they started doing something with their office that managed them, and then they'd come back and say, we miss you guys. So it was good work, but I could've never worked at any other DOE site as a fed. I would have had to be on the contractor side where the operations were actually going on.

So you need a little bit of freedom for initiative and to make decisions.

And you need to be responsible for something, not just pass the paper.

You enjoyed that responsibility, didn't you?

Yes.

Now you also had a saying which I thought was kind of marvelous. I'd like to know where you got it from. The difficult can be done in a day. The impossible takes a little longer.

Oh, actually it was even less than that: The hard we do immediately. The impossible takes a little longer.

OK. Now where did you get that?

Actually out at the test site. The tunnelers that tunneled Area 12 tunnels had this picture and that was what they had for their slogan, was a big old ugly-looking miner coming out of a tunnel and that was his saying.

There was really quite a can-do attitude there, wasn't there?

Yes.

And obstacles were just looked upon as challenges-.

Another challenge. Yes.

That just takes creativity.

Yes.

So how do you feel about this emphasis upon taking no risks whatsoever.

It's where our society's heading, and it won't be long before we're like the Soviet Union.

Tell me what, in your view, the kind of problems that creates.

[00:50:00] Mediocre performance. If we manage everything by committee or consensus, what do you end up with? You end up with the average. You don't end up with the best or the worst, you end up with the average, and then you end up with mediocre performance. Somebody—

Or you're run by people who are afraid, you know, fearful of any kind of failure whatsoever.

Right. And when I was working on my MBA, there was a lot of interesting studies that I reviewed, and one of them has to do with immigrants: that it's the immigrants or the next generation of the immigrants that make America great. By the time the third generation comes around, they're not taking risks, they're not working hard, and you can kind of look at places in the country where a lot of immigrants have gone, one being California over the years. You know, it's the third largest gross domestic product in the world if California was their own country. Of course, they're losing that now because now we're giving everybody everything and all the businesses are coming to Nevada. We're now the immigrant state. And so it takes risks to be an immigrant. You have to sacrifice a lot to do it, and that takes decisions and guts.

Now you saw some of those zero-tolerance-for-risk demands being placed on the test site, too, didn't you?

Yes.

Now what was that doing to the test site? Because you know they were using standards of safety but they were getting criticized for not using standards that absolutely—

Guaranteed no risk.

Guaranteed no risk, yeah.

And you cannot survive in the real world without taking risks.

Can you tell me some of the risks that the test site people were taking themselves?

Oh, just being in the construction or drilling or mining industry. It's a risky business, and everything we did was construction or drilling and mining.

I talked with some miners and they said they liked being on the edge, that there's an adrenalin rush to even choose the field as a miner in the first place.

Oh yes. Right.

Or a driller, you know, because they are dealing with—

Heavy loads and—but then I don't know if you saw that picture but in the Soviet Union when we were loading the drill rig onto the ship, and I don't know if you saw, I had that picture with the crane operator. Well, one of the things we had done before we left is designed and built a jig to lift up the drill rig from the shore and put it on the ship. Well, the crane operator says, No, no, we're going to use our jig and our cables to lift your drill rig. And I'm saying, No, no, you're going to use ours. And we went back and forth and finally I said, OK, but then you take responsibility if something happens to the drill rig. He looked around and said, OK. So he did and he did a wonderful job and I mean it was perfect, but if you saw his cables, although they were huge cables, they were all ratty and we're going, *oops*. But he took responsibility, and that was neat to see somebody over there, but it was somebody working day-to-day in the real world, in the environment—

Now did he use his own or did he use yours?

He used his, and he used his jig.

Oh, he did? And he still felt more comfortable with his own.

Yes, because he knew it, and you know, you've got to understand that. It was *his* piece of gear on *his* crane.

Yeah. Yeah. Not unfamiliar.

I'm not unfamiliar with it. So he knew what its capability was and he made the right choice.

Anyway, we were going back to how I got into VMD [Verification Management Division]. So anyway I got selected to be director of Test Operations Division, and now I'm responsible for conducting the tests. And during this time frame—

Working under Vern Witherill?

No, now I'm a division director equal with Vern. Vern's in charge of the test site but then the Test Operations Division actually conducts the tests. Even though the Nevada Test Site Office supports everything to make it happen, Test Operations was responsible for doing it. And so now I've seen everything there is to do with testing. And I think I was there for a year, maybe, and **[00:55:00]** now the labs are coming to Magruder and complaining because they didn't feel that Guy Allen was defending the test site in his negotiations with the Russians and stuff, and defending testing.

Are you talking about the Comprehensive [Test] Ban [Treaty] or—?

All that. All the negotiations that were going on. Continuing implementing the Threshold Test Ban Treaty, and they were just getting into discussions about the Comprehensive Test Ban Treaty.

Were they saying [about] Guy Allen—they wanted to continue testing, or were they—?

Oh yeah, the labs wanted to keep testing, but they just didn't feel that Guy was being strong enough in defending the testing position, so they basically went to Jim and said, We want Charles to be in that role. So I guess they figured I was a big defender. And so Guy and I switched and I came back to director of the Verification Management Division and Guy went into Test Operations Division. And so I got into now implementing. Now I'm responsible for implementing what I had helped to write anyway.

You knew your book. You'd written that book.

Yes. Written that book, or at least been part of it. And so then I'm having to defend the DOE role against DoD and the other interagencies to what our role was going to be and plus negotiating with the Soviets. So that was how we got into implementing.

And you were in that for a couple of years, then, is that right?

Yes. Actually, a little more than that because after we merged the—antiterrorism got merged into that division, so after a while I was not only doing verification, [but] treaty implementation and the NEST [Nuclear Emergency Search Team] operations and that sort of thing.

Can you tell me what NEST is? I mean what you saw of it?

It's basically Nuclear Emergency Search Team and it's basically an antiterrorism group.

Within DOE rather than DoD, is that right?

Within DOE. DOE, by the Atomic Energy Act, has responsibility for anything nuclear, and that separated DoD from—basically Congress wanted to make civilians in charge of the nuclear role. All DoD could do was deliver them when told. So that's why—anything that has to do with a nuclear device—DOE steps in and provides the technology and so forth to do it, including finding either a rogue or a stolen weapon or a Soviet weapon.

Boy, their job sure branches out from more than just nuclear testing, doesn't it?

Yes. You'll have to turn that off before I tell you any of the other good things that we used to do.

Do you want me to?

Sure, go ahead.

OK, we were talking about some of the other things that DOE is involved in.

And Verification Management became part of the antiterrorism group, got merged into that. And so I ended up at one point, although still being responsible for treaty work—that work had gone down to nothing when the CTBT [Comprehensive Test Ban Treaty] became mode. But during

that time we were doing a lot of negotiations for the CTBT and basically we were doing all the arguments why not to, but the politicians make decisions that aren't always technically correct.

So where did you stand on this?

Oh, I didn't go along with the CTBT at all.

Can you tell me why? Because Troy and Paul [Robinson] also, you know, testified against it.

Yes. We were back there briefing a number of the political appointees at that time. This was under the Clinton administration. And one of the laboratories' test directors is briefing them about the tests we've done and so forth, and I asked the question, Have we ever predicted correctly in advance what a nuclear yield would be on a test? The answer was no. So if you read between the lines, we can still not predict what a nuclear weapon is going to do. The science is so advanced that what we've done in the past is try to model. This worked one time. Well, let's try this little change, and oh, this did this. Well, let's try this little change. It's not possible to predict exactly what a nuclear device is going to do.

Especially if they're sitting and getting older and decaying, the unpredictability is even worse.

We have no clue. Even worse. We can't predict a brand new one. The device we used for JVE was the most known device in the stockpile. We took a weapon off the shelf, we know this thing better than anyone, and yet the yield was 25 percent more than we predicted. Well, if we can't get within 25 percent, I mean in any other field, you'd throw away everything and start over because you—

So is this why you're saying that testing needs to be continued, that we still—

Right. We still don't understand—

We're not accurate enough.

Right. And I said this as one of my speeches when I retired, that testing wasn't about making nuclear weapons. If you ask any of the scientists or you had been in the program, it was really about pushing back the veil of ignorance. We were making discoveries every day that have now gone into industry and been commercialized in a lot of cases. But that's what it was. It was science. Scientists were in it for the science. And it wasn't just us. The Soviet scientists were the same way. They weren't really building weapons. This is science. This is exciting. We're exploring the universe.

We're gaining knowledge.

We're gaining knowledge. So that's really what it was about.

And so what you're saying is that by putting a ban on testing, it puts a ban on our ability to—
Understand the universe.

And to invest in some things that maybe normal industry would—
Would not.

Can't afford to do.

That's right. There will be science out there that will not get discovered now. There'll be things out there that will not get discovered because we can't.

Well, the defense industry does open up a lot of research.

Yes.

Now you didn't get to testify, though, but these were just some of the feelings that—and you saw no conflict between bringing the end of the Cold War and continuing to test.

No, but the DoD did. They recognized just doing the Threshold Test Ban Treaty, they called it the "slippery slope," that if you give this, you're going to go down here, and if you give that,

you're going to go down here, and you're down a slope that pretty soon there won't be any. And they were right.

So DoD recognized that verification was going to lead to a comprehensive test ban?

Yes.

Did you guys know that? Did DOE know that?

I don't think DOE believed it.

They always thought that—

That testing would have to continue. And technically it does, but politics, and techies have a hard time understanding this because in the real world, technology is everything, but in a society [00:05:00] that's manmade—that becomes more perception than truth- politics rule.

Is testing necessary for the defense of our country in your opinion?

Yes. I don't believe the terrorists would've hit the Twin Towers if we were still testing weapons.

Really? Now what makes you say that?

Because one of the reasons for nuclear testing was as a deterrent. If they knew we were testing, they knew we have all this capability. It's in their face every day in the news media. If you don't do it, it's hidden. It's buried. They forget it's even there.

Tell me what you think of rogue nations that are trying to do testing. What do you think is going to happen to them?

I don't think they'll have to do testing. I think there's enough open information out there. Again, under the Clinton administration, everything got declassified. It was all out there. Anybody—

Now how did you feel about that?

Oh geez.

Did that really unnerve you?

Yes, it did. There was too much information put out there that any rogue nation could look—A smart scientist in a rogue nation could say, This is all we need. Let's build one. We don't need to test. It's already been tested. It'll be heavier. It will be more 'robust', is the term you'd use to make sure that it goes off, but anybody can build one. I could build one in my garage. I mean it's—so.

Well, there's some knowledge, then, that really should not be in the public domain, and that's one of them.

Yes, that's one of them. Well, and there was a lot of it.

And that's what declassifying information ended up doing?

Yes. The political drive was to declassify everything. It wasn't you have to defend this classification. You declassified *unless* you can defend it. It's declassified. And so I mean just in our own office, I mean *everything* got—there was hardly anything left that wasn't declassified.

Yeah. Well, I understand information about the devices [is classified], and there are some things that are still in that category, but it has been opened. Do you, obviously since you've let me interview you, see some value that will come of some of this information getting into history, or even getting back into our society, you know, the feedback. Do you see that there might be some benefit to talking about the test site?

Yes. One of the major benefits is the test site was a laboratory, and it was a laboratory to do high risk experiments that couldn't be done anywhere else in the world. As a matter of fact, there's not another geological place in the world better suited for that than the test site.

It wasn't planned.

It wasn't planned.

No. It just happened to be that way. We lucked out. We got lucky. Sometimes luck is better than anything else and—

And that was before underground testing came into play.

Yes. That's right. So the test site was just a high risk business and it just got to the point that people were afraid of accepting those risks.

Do you think the trust of government and the trust of what the test site was doing needed to be defended?

Word that a different way.

Opened up a little bit more just so that it could be defended, because it must've been frustrating not to be able to answer criticisms that were leveled at the test site through the years.

I don't know if "opening up"—what needed to happen was education—and this was AEC's [Atomic Energy Commission] fault from the beginning, was not educating the public about radiation. I mean otherwise there wouldn't be a big hurrah about the storing, quote, nuclear waste.

We're looking at pictures 89 and 90, and tell me what these are.

OK, 89 [C.McWilliam89][C. McWilliam 90] is after the ten-year reunion here in Las Vegas: Viktor Mikhailov going into the airport. We were dropping them off at the airport, and that's my son Jamie carrying Viktor's bag—for a Cold War warrior, the head of their laboratory who used to be called Dr. M, it's the only way our intelligence community knew about him. And here's my son carrying his briefcase or his suitcase at the airport.

Dr. M.

So I just thought that was a really good picture to show the end of the Cold War.

Yes. Well, there were two pictures of taking Viktor to the airport.

Of Jamie hauling Viktor's bag.

Now this is a group, what is this?

This is actually a group housed at the Golden Nugget downtown, and this is just getting ready to leave the Golden Nugget in the morning to go to the airport.

That must've been really good for you to see him again.

Oh yeah, it was.

Were you able to do a lot of reminiscing with him?

We did quite a bit of reminiscing but, you know, our intelligence folks didn't want us to get too close.

Really?

Yes. And it's sad but we were trying to negotiate at that meeting that we would end up doing a mock coordinating group so that we wouldn't lose the expertise. Like we try for nuclear testing, we have a group of people that are kept on the line to go back in, in case we ever have to.

That's another problem of the Comprehensive Test Ban, isn't it? You begin to lose some of that expertise.

We've lost it. We could not go do a nuclear test with the same assurance that we would collect the technical data and contain the test, not as—no, you just couldn't do it. There's so much reliance on experience that is fading fast. I'm probably the youngest one left that has enough comprehensive knowledge to do it.

Well, Patrick Rowe was kind of a kid at the time, too.

Yes, he was, too.

And he is presently with Yucca Mountain.

Yes.

Now what was your relationship with Patrick?

At that point, he was one of the drillers that did drilling support to the test site, and he had gone into Kazakhstan and came out and got into some trouble.

He got into some trouble?

Oh yes.

What happened?

Oh, it's a long story, but what he ended up doing is making some comment on paper. He was trying to send out some souvenirs. To him they were souvenirs; to the Soviets, it was stealing government property. Pieces of barbed wire, old hammers, and that kind of thing. He'd written a note: This is the barbed wire they tried to keep us penned in with. and This is their technology, this old hammer," and he had put it in his bag. Well, when they search the bags when he was leaving, they find it and a big hullabaloo arose from that. And Nick Aquilina was not happy.

That's interesting because Larry Neese brought home some of those souvenirs from their test site, too, and all it was, was just rusty tools. You know, it was junk.

Yes. If Pat hadn't written the notes, there wouldn't have been a big deal. But the notes blew it all up. When I came over after Shagan, General [Arkadii D.] Il'enko took me aside - and again he was my buddy now—took me into the room where they had locked up all this stuff and showed me all the stuff that, you know, he had done, so—

Yes, Steve Ronshaugen tells a little bit about that, how they very seriously came to him and said, The treaty has been violated because they have taken things from the test site. And the treaty was under the assumption that it was secrets. You don't take secrets from the test site. And they were all upset because tools and basically junk, I guess, archaeological data, archaeological treasures were being taken from the test site.

[00:05:00] And rocks, I mean and, you know, it was more just the way it was done. I mean if it would've been done more like Larry did it, it wouldn't have been a big deal.

Well, Larry probably didn't write.

That's right.

He didn't document it.

Yes, as I told you before, you don't ever embarrass them because that's the kiss of death to them.

Oh gosh, those are probably just almost innocent things, too, weren't they?

I'm sure it was, and—And you have to realize that, as I mentioned, when you've been over there, one, it's very depressing. Two, when you were on the test site, you're isolated from the world.

You did not have communications back and forth. We had a fax machine that faxed at a—the maximum speed was 175 baud, which means a line would come in—if you could send a paragraph back and forth every day, you were lucky, and that's what you'd get news.

No communication.

It was cabin fever to—

No e-mails.

No e-mail. There was no such thing. And cabin fever to the *nth* degree. So, you know, if the U.S. had an earthquake and fell into the ocean, you didn't know about it until the Soviets told you. So, you know, there's a lot of psychological things, and we saw people cracking up from it over there. So there's a lot of that that happens to people and they don't even recognize it.

And the really bad thing was when the DoD guys took over [being] in charge in one of our coordinating groups, arguing with one of the guys that we have to be able to make phone calls back [home]. Everybody's supposed to make a phone call back once a week to their family. We negotiated in the treaty, it's supposed to happen, and the DoD guy says, No, we aren't going to let them do that.

And, you know, and I'm telling them, Our guys are volunteers. Our physicists volunteered to do this for the good of the country. You're *ordered* to do it, but our guys don't need to be here. They have other jobs to do.

So I won that battle but it was—that night I was sick. I didn't get to go to the dinner with everybody.

Well, you said you were picked because you could fight. You could defend, and it sounds like that was one of the little battles. You do have to pick your battles.

That was one of them, yeah. Yeah.

But, you know, you were talking about the tenth anniversary of JVE and how even though the Soviet Union had fallen and even though at this time they would have had the nuclear testing ban, that there was still a gap between you being able to renew those friendships.

I think it was probably the last day of the tenth reunion meetings, and the intelligence rep who used to be Katie's boss comes in and borrows my office, gets on my STU [Secure Telephone Unit] phone, calls back to his office saying, Aw, these guys are terrible. They're not letting us in. They're not doing anything. Because we—and we doing it more from a technical point—wanted to go to Novaya Zemlya and do a pretend coordinating group to do a test there, like if they were going to conduct one.

Now this is while you were in Las Vegas?

This is while we were in Las Vegas. This is what we were proposing to the Soviets at the tenth reunion. And knowing Mikhailov—and their organization was different, their tests sites was run by the military, so even though Mikhailov was Minister of Nuclear Energy, he didn't own the test site. So basically he's telling the group but he's looking at me saying, I can't. The military won't let us do it.

And the first thing the intelligence guys do is call up their office and says, Mikhailov's stonewalling. He won't do it. And I know, I believe him, he has no control, he cannot do it.

Were you in on the planning of that tenth anniversary?

Yeah. Oh yeah.

Whose idea was that? It was so marvelous.

Where did that come from? Where did it first—? I think it actually came from the Soviets.

Really. That you got some kind of communication with them?

Right, that they actually proposed it. Then it took a little buying-in because at the time our [00:10:00] manager was, you know, Nick was gone and we had a different manager that knew nothing about it. A lot of it was coming in from Washington to try to make, you know, or at least make a show that relations were good. And so yeah, communication got started and we made it roll.

Well, it was really quite a well-planned several days. You know I was looking at the different presentations that—

Frances Guinn once again busted her butt and did a very good planning.

You were up there with Troy and Jim Magruder and Paul Robinson, you know, your name was very, very prominent as far as—

That's why I got drafted to be part of the U.S. delegation going back to Kazakhstan afterwards.

It looks likes invitations went out and Larry Neese got one and he lived, I believe, in Oklahoma at the time. So they made quite an effort to bring in people. How many people attended that anyway?

I don't even know. We'd have to count the people in the picture. But there was a lot of people, and I had people come up to me later saying, Thanks for inviting me. And a lot of the times, it was people that were behind the scenes, making things happen, that most people didn't know about. And so it was good.

Yeah, because there seems to be a very small group who actually did the active participating of the JVE. But everybody knew about it. It seemed like everybody at the test site and even within the nuclear testing industry shared that excitement that this was a key moment for all of them, not really knowing the full implications but—

Yeah, it was a key point in history that got lost.

Well, you mean it got lost to scholars or who did it get lost to?

The politicians. And Katie could tell you this, they did not want to advertise it.

You're talking about the JVE in 1988?

The JVE in 1988 was kept very low key.

Well, I noticed that it was competing with some negative things going on in the Reagan administration at the time. I can't even remember what it was.

Might've been the Iran Contra affair. That was going on then.

Yes, I believe it was. That gained by far more attention than the JVE did.

Ollie [Colonel Oliver] North told the Senate to go jump in a lake.

Well, and the things that they did announce, you know, they said that they're going to do a joint verification experiment and they said, we're doing a familiarization visit. Those are kinds of things that are almost veiled, you know, as far as what in the world are these guys really doing?

Right. Well, and Katie points this out a lot, there were other treaties being negotiated that had far less impact on the U.S. but because those were being touted. For instance, the people got big awards. She worked on this treaty, did all kinds of stuff, and got nothing. And so it's just interesting how the government—

Selects certain things to profile and just kind of keeps other things, you know, because there are a lot of treaties and if you're studying diplomatic relations, it does become mind-boggling, and you're right, the JVE got lost. The JVE as a treaty to the Cold War, it's not even—

Hardly mentioned. Yeah.

No, and it's not in Cold War scholarship either.

And it should be. I mean the drivers of the Cold War were the ones involved. I mean the Cold War was about nuclear standoff. That's really what it was about, and the people on both sides that were negotiating the end of that were the ones that were driving it.

Well, and I find it interesting, the Cold Warrior mistrust and suspicion on both sides. They came [00:15:00] face-to-face with one another, you know, and the walls that came down as they worked side-by-side with one another is a very inspiring story.

Oh yeah, and you know you could do this forever but during one of the coordinating groups, Viktor Mikhailov took us to Arzamas test lab, their Los Alamos.

Oh, you did get to see that.

Oh yes. I guess I didn't tell you that. What would I think about it? He actually flew us on his private plane out there, and this was actually the anti-intrusiveness device meeting, and the intelligence people decided they didn't have an interest, so they didn't send anybody in this group. So we're over there—

The U.S. intelligence—

U.S intelligence. And Viktor always treated me fantastic anytime I was over there, so they invited us to go to Arzamas, flew us on his private plane into the laboratory, and so here we are, the first U.S. people.

Was that exciting?

Oh, it was—yeah, it was fantastic.

It probably was—the technology was probably every bit as—

No.

Oh, it still wasn't.

Technology wasn't that great.

It wasn't, even in the science lab.

But of course they're not showing us their latest and greatest because they're keeping that to themselves, too. I mean we'd do the same thing. *But* the fact that we were there, the first Americans ever to be in that lab, we met, you know, in a meeting with all the greatest brains in the Soviet Union, and it was just awe-inspiring, sitting in this great big room, and there's probably a picture of that around here somewhere, with all the Soviets and the U.S. delegation.

There were some pictures over here.

Maybe that's it.

Maybe. Let me see if it is it. We would like to get that numbered too.

We said for years and years that the thing that separated the U.S. and the Soviet testing was they had all the brain power and we had—

[00:17:21] [C.McWilliam78]He's in this one.

Yeah, this is inside Mikhailov's office in Moscow. Let's see if we can see some—some in the coordinating group. And that's the coordinating group.[C.McWilliam79] [C.McWilliam80]

[C.McWilliam81][C.McWilliam82] [C.McWilliam83]

Yeah, they did say—let's see, I've got 84[C.McWilliam84] says it's Moscow, that these are just things that says it's Moscow.

Yes, these are Moscow.

And 85[C.McWilliam85] is the countryside. So it looks like they took a tour of it.

We took a tour. Yes. Couldn't take any pictures inside Arzamas but I was thinking that they—

Now that one says it was the preliv coordinating group in Moscow. [C.McWilliam86]

Yes. That's the coordinating group.

Some of them, you can tell that they're working and—let's see, 87 and

88[C.McWilliam87][C.McWilliam88], again, that's the preliv coordinating group in Moscow

Mm hmm. Yes.

I just took it from the back because there was some writing on the back.

Right. That's in our hotel. No, I don't have any of the pictures here. I know I've got pictures somewhere of that meeting that the Soviets took. But that's the first time the U.S., they went into their history of their nuclear program, how they got from the very beginning, how they got their first device. Iulii Khariton—I remember that—I mean their oldtimer, their Edward Teller-type guy, talking about, you know, when they were capturing Germany, they found highly enriched uranium, and that's what they used to make their first bomb, and our intelligence community never knew that. And here we are sitting here and they're just sharing it with us. And that's when it really starts coming out, Hey, these guys don't care about building weapons, they're just here for the science. So it was an opening. And that's the kind of thing that

once they got to trust us and know what we said was real, we weren't lying, I mean it was just really easy to get things from them.

Now were there things about the history of their nuclear testing that surprised you?

Well, that was the biggest surprise.

Where they found their uranium?

Yes, because we always wondered how did they build a bomb so fast. Here it took us all these [00:20:00] years and *poof!* They caught up.

And they got it from Germany.

Yes, and the German scientists they captured.

Did they steal as much as what Americans thought they had?

From Germany?

From America.

We don't know. They didn't really go into that. They just hinted at it, which was pretty—they knew what a big deal that was to us, but they just hinted at the designs coming from the U.S.

And the hard part, then, to get was the material, so getting that from Germany was a big heads-up.

Now did you have any indication from them that they sometimes were inaccurate about their yields?

Not really. Not from their version.

Because I noticed Viktor in his book I Am a Hawk, he liked to talk about how the Soviet Union did fewer tests and had lower yields overall than the United States tests did.

Probably on average, but their monster yields were way over ours.

Yeah, and some of the scientists' books that I've read have said that these yields were not always accurate, that they were fudged to look a little better than they were.

Better than they were. Yes. When we were negotiating the Threshold Test Ban Treaty, part of what was going on, even in our own community, was whether we could rely on seismic devices to give us a good yield. So we would conduct our own tests on the test site and do one area, do a test and watch the seismic yield, and right next door do another test and the yield's off by a 100 percent from what the other one was, so we—although the seismologist, and Katie being one of them, the seismologist community would say, Oh no, we can tell exactly where the test is. As testers we knew better, and even Katie knew better and would defend that role. But getting through our own interagency group so that we could be honest with the Soviets was more of a battle than negotiating with the Soviets.

Really? So it was very difficult to give honest documented information even to your own groups?

Yes, not so much from us but from them. Again, I think we were very naïve, and again being techies is probably a part of that. It's black and white and here's what it is and we're honest.

Well, the other side are more politicians and they gray everything. There's no right answer. And a lot of these other organizations are more interested in building their empire.

Well, can you give examples of what—

Well, one of them was the DoD organization that did seismic monitoring.

Was that the geology one?

Well, they did seismic monitoring. They were, quote, responsible for the U.S.

monitoring of nuclear tests [AFTAC: Air Force Technical Applications Center]. But part

of their organization's funding depended on them being able to show that No, we are

accurate, we can get this down. And every scientist and every geologist in the world knew

they weren't anywhere close. But they kept defending their position, saying they could. And the Soviets defended that position, too, because they didn't want any accurate yields on their devices. At least one side of their organization did, just like they did on ours. And until you've dealt with an interagency arena in Washington, you don't realize how hard it is for anything to get done.

Oh, it sounds like especially when you're figures will determine whether or not you get funding?

Whether you get funded. Yes. And I don't know why this is, but they're all building an empire.

They're not looking out for what's good for America. It's more, How do I build my own piece of this? But that's any organization, really. Except for us. We didn't care.

[00:25:00] *So now you've gotten into capitalism.*

Oh, I was always a capitalist, and if I had been anywhere else in the government, I couldn't have survived, just because having been in an organization that was originally part of the Atomic Energy Commission where you were an exempted service, you got promoted based on what work you did.

Now I noticed, you know, when I was looking at your name and your business, that you don't even connect yourself to the test site at all.

No, you can't. And actually what I do now is I do a little bit of it, like today I was teaching classes and we send them a bio to read before I teach the classes and there we kind of connect that we did some arms control stuff.

What classes do you teach?

Usually continuing ed classes for realtors.

Oh, is this appraisers?

No, it's so realtors will understand buildings, because most of them don't have a clue what they're selling, but yet the courts hold them liable for—

Well, and probably the work you did in construction making things solid has served you well as far as knowing when things are well-built.

Yes. So I use it. But in the political world, the perception of the test site is it's a terrible place.

Yes, it is. It doesn't have that same good feeling of will that even the community surrounding Los Alamos [National Laboratory], you know, or the other one—

Livermore?

Livermore [Lawrence Livermore National Laboratory]. Yes.

Oh, Livermore's got a bad rap but—

Yes. But Los Alamos, the community supports them.

Supports them more. Yes.

Yes, and it doesn't here. Well, you said something about that the community needed to be educated. There was two things that I wanted to address. The community needed to be educated as far as radiation was concerned, and the other one was your thoughts about Yucca Mountain. I'd be interested in both of those things.

One, people are afraid of radiation because they're ignorant of it. If they understood it, it'd be no different than electricity.

So what do they need to understand?

They need to understand the dangers and that a lot of it is hype and not a danger. And our whole problem with our society and especially in the last twenty years is people graduate from high school and never even had a math or science class. So a lot of the people, and these are a lot of

the people in the media, have no science background. They're writing about science and they're condemning it, but they have no understanding of it. And here we are in a very techie world but nobody understands what they're dealing with. And radiation is one of those things that I don't understand it, it must be scary. And so if nothing else, that should be in everybody's school, this is radiation, this is what it is.

If you don't understand it, then it's going to be bad.

That's right. That's just human nature.

Or it is something to blame because it's an unknown. It's easy to blame because we don't understand it. So science becomes almost the enemy, then.

Oh yes. Don't you remember all the movies out of the fifties and sixties, all the sci-fi movies, it's always—

The mad scientists. They look just like Edward Teller.

Yes.

That's what I noticed, you know. Once I started reading about Edward Teller, I thought, Well, I've seen him in all those mad scientist movies.

That's where they copied it from. But Edward Teller is an interesting—[I'll] share a story with you. When I was back at the lab for Livermore for some meeting, and I can't remember what it was yet. Edward Teller was sitting in the back and here's this old guy and this cane that can barely walk, and he gets up. He was going to make a presentation, so they invited him up to the front, and he comes up, just barely moving. He gets up front and starts speaking and he's twenty years old again. I mean you could see his brain had clicked on, he's talking science now, and it was just—I could not believe the change in him.

It keeps him young.

Yes. It was just right.

He perceived a danger that never left him coming from Hungary and seeing what the Nazis did, he never forgot that.

[00:30:00] Yes. One of the guys in the maintenance department at the test site was from Hungary and had escaped after the, I'll call it a rebellion, but after their put-down, and we were worried about him and the Soviets when they were onsite. I mean he hated them. Just literally, just hated them bad. And a lot of those, I guess what we used to call satellite countries, were that way. They just hated the Soviets.

Yucca Mountain. You have to go back through the history on nuclear power, and again I studied nuclear power in college. I almost went into nuclear power plants. Good thing I didn't. Jimmy Carter decided that we were not going to recycle nuclear fuel anymore because we had to ship plutonium down the highway and all these used fuel rods—to put them to a reprocessing plant and get them reprocessed back into fuel that can be used in a nuclear power plant. Right now we use less than 10 percent of the energy out of those fuel rods. It's using like 3 or 4 percent. And then we throw them away, so it's like taking your can of gasoline, putting three drops in the car, and throwing the rest of the can away. Well, that was Jimmy Carter's fault. And there's a lot of justification for that, but if you look at the energy use in the world, it doesn't make sense. So because of Jimmy Carter's role in banning reprocessing of fuel, one, energy costs go up through the roof for nuclear power plants because now we can't recycle this fuel. We have to pay for it to begin with, and then we don't get to get all the benefit out of it. And two, now we have a Yucca Mountain that has to store all this fuel. We wouldn't have to store it if we reprocessed it.

Well, that's another solution that they'd never even talk about.

Oh, they don't talk about it.

I noticed Nick Aquilina wrote to the R-J [Las Vegas Review-Journal] a couple of years ago and he said the debate, the dialogue, is not even allowed.

Right.

This is something I found on the Internet and I thought, I didn't realize the debate about Yucca Mountain was not—you know, who's preventing it? Is it the media or is it ignorance or—? Who's preventing it?

Well, I don't know if I told you this story. Maybe I didn't, but again, under the Clinton administration, and this was really what drove me out, is we went back to Washington with Bechtel to make a presentation on burning all the plutonium in the U.S. in CANDU [Canada Deuterium Uranium] Canadian reactors, that we could—I got to have the right term here, basically dilute the plutonium to a point that it was useless for anything else, send it to the Canadians, they'd burn it up in their reactors, and it would go away. Be gone. And we'd get power back from the Canadians at almost nothing.

Sounds like a good solution.

Great. We get rid of all our plutonium, we get all this free energy. Wonderful.

And the Canadians were open to the idea.

The Canadians are all for it. Oh yeah, they're all for it.

They use nuclear energy, then.

Oh yeah. Big time. So we go back to Washington and propose this to some of Clinton's political appointees, and the response—and here we make this big show, we really explain it all, you know, all the benefits that would befall the U.S. His answer was, we can't do that. That would put a positive spin on nuclear energy, and we can't have that.

You were doomed, then, weren't you?

Yes. It's one of these things, If you take away our issue, what are we going to have to fight for? So that's just the whole thing with Yucca Mountain. If somebody was really smart, they'd say, No. At the test site, we'll reprocess the fuel and ship it back, and we won't have to store it. Now if somebody proposed that, that'd take away everybody's argument, except for the transportation issue. What people don't realize, if you put it in perspective, a truck going down the road hauling propane is a *lot* bigger hazard than hauling nuclear fuel through the city.

But it's one we're used to dealing with on a daily basis, putting it into our cars, and the other we're not.

And when they go off and they wipe out a whole city, it's in the news one day and gone. And that's what happens. And if one of those big propane trucks goes up, it would take out all of downtown Las Vegas, and nobody thinks about it because, yes, they're used to seeing it every day, and most of the times they don't have accidents. And then if the nuclear fuel has an accident, Oh, that would just be terrible.

So what's going to happen when we begin to run out of petroleum?

[00:35:00] The issue right now is we should be building nuclear power plants just as fast as we can, and quit burning natural gas and those fuels that could be used for transportation. Because we're years away from developing an alternative for cars. We have the alternatives for stationary power plants. We don't have it for transportation.

Do you think there's going to be a crisis in the future?

You know, it depends on who you look at. I should show you this article. Two different sailing magazines I get. One is *Pure Sail*, very environmental friendly, I'll say, and there's articles in there on the new technologies for power plants for boats. And in the sailing magazine, it's very

positive on this one experimental system that's out there, but it doesn't tell us about price or anything like that. And the yachting magazine, which is more geared towards power boaters who burn a lot of fuel, they put it in perspective. They say, *Yeah, here's this system. To actually buy it and put it on your boat will add between three hundred and five hundred thousand dollars. That will take 265,000 gallons of diesel to pay that back. We're not going to burn 265,000 gallons of diesel in our lifetime. So there is no payback. And so it'd be nuts to spend money on this technology when it's never going to get there. And that's the same thing with hybrid vehicles you been reading about? The car will be wore out and they still won't have gotten a return on the extra money they paid for that vehicle versus if they would have just, you know, like a Honda, what's their hybrid? They buy the Honda hybrid Civic versus the regular Civic, it's three to four thousand dollars more. The two to three extra miles per gallon they get will never pay for itself.*

Well, I guess economics talks, doesn't it? What's the bottom line?

That's right. The bottom—yeah. And unfortunately what we do in our artificial society is try to make things work economically, even though it really doesn't. It's like I tell my attorney friends—we make these laws, like silly laws giving pedestrians the right of way in a crosswalk. Well, science, physics, the real world says when a four-thousand-pound car hits that person that has the right—

He's got the right of way.

That four-thousand-pound car has the right of way. You can make all the laws you want and it's not going to affect reality. That's the neat thing about boating and seeing the real world is that you deal with real life, and it's a lot easier to deal with.

So that attitude in the Clinton administration made you decide that you did not have a future anymore at the test site. That must've been—

Not only the test site. The American public doesn't have a future anymore.

Was that a real low point for you?

Yes, that's when I decided I'm getting out of here.

That you had to make a change.

Yes.

Now you had a lot of changes going on at that time, didn't you? You had recently married Katie and having your son and—

Yes.

And so you pretty much had to rebuild, didn't you?

Yes. As they used to say in the retirement classes they would give you, you got to have Plan B, so I started my Plan B and started our business and it grew much faster than we could've ever expected or planned on.

Well, your drive, your energy, your enthusiasm.

And I think that's part of it, and I think it's part of the same thing that we used in JVE: honesty, integrity, truth, and trying to help people. It's just what we do.

Now is there anything else you would like to add? I mean you have been wonderful. You've answered a lot of the questions that I had. Any additional stories you would like to tell?

You know, there's things like I wish it was possible for us to stay in touch with the Soviets, but I think everybody that was involved has pretty much lost touch with any of them. It'd be nice to [00:40:00] have a fifteen-or-twenty-year JVE reunion, if there's anybody left, and there won't be. Very few.

Well, Viktor looked like he was getting older. He was getting up there.

Yes, and drinking a lot, especially, I mean when we went back to Kazakhstan for the ten-year there—

So it was here and there.

And there, yes. We did a similar thing there with less—

And one of the things, you know, and I really fell down on this, that picture of Jamie and him in the airport? I had promised, well, I'm going to bring you these pictures, and I completely forgot, and I got off the airplane in Kazakhstan and he says, *Have you got those pictures?*

Oh. Because they're sweet, you know, especially because there he is with your little son and he's [Viktor] looking a little older, you know, like the years have worn on him, but just the fact that he came back, you know, that it was meaningful for him to come back.

Yes. A lot of the Soviets, I mean this was a life-altering experience for them as much as it was for us, probably more so for them.

What kind of things altered their life? I mean in addition to the fact that the Americans—

Were no longer the bad people?

Yes.

They became capitalists, especially the younger ones, and I started seeing this in our later trips to the Soviet Union and Russia. The younger people were smiling. I mean it hadn't worked its way all up to through the generations, but for instance Michael Farafonov came to the ten-year reunion, and he was interpreting for people all over the world, going all over with rich oil men and stuff and flying on private jets and doing all kinds of stuff.

But didn't some of their capitalism end up marketing some of their nuclear products and expertise?

Well, that's alleged.

I think Viktor even says that there's nothing wrong with our marketing this to Iraq, and the United States has criticized us.

He did pound on that pretty heavy, in fact.

He did. I am a capitalist. You may be an influence you didn't mean to make.

Yes. And done correctly, there's nothing wrong with that, but unfortunately they're very naïve.

So they went through a declassification of their information, too, didn't they?

Out of necessity. Theirs was more out of economic necessity, trying to *save* their laboratories, because one of the things *he* was—after he became minister—was battling was to try to bring funds into the laboratories to keep the scientists busy.

Yeah, he said they weren't being paid.

Right.

That their wages were cut off.

Way behind, yes.

And for pure survival, it was getting very scary.

Yes. That it was.

And he also talks about—because it sounds like at the same time that the test site was experiencing criticism—that the nuclear industry over in the Soviet Union was also under attack for taking bread out of the mouths of the people.

Yes, but—other than Chernobyl, a lot of their stuff was old and decrepit—they kept their power plants going. He was able to hold their nuclear program together. We don't have one. So when you think about it, they've actually done a better job of maintaining their scientific capability than we have.

Oh, so you're saying because they're using nuclear power, that they're able to keep that—

Expertise.

That expertise, whereas we've lost it.

Right.

Oh, we did quite a compromise, then, didn't we?

Oh yes.

Oh my goodness. Because we keep thinking of them as not doing any testing and that they don't offer any kind of a threat or danger. But you're saying that's not necessarily—

No, that's not. And when they get their ducks in a row, their economy is going to far surpass ours. They have got so many resources that we could only dream of.

You're talking about oil or—

Oil. All the minerals.

[00:45:00] *But what they lack is a seaport. They lack a way of transporting it out.*

Vladivostok and Nakhodka are *fantastic* harbors. They need infrastructure, but that'll come.

They just need some capitalists there.

Oh, so you see quite a bit of hope for them, don't you, their country?

Yes.

Do you see some of the anarchy that's going on there ?

No, they have a number of problems. One is the Russian Mafia that kind of holds things back without getting a cut. Lots of problems with that.

Well, that's a negative side of capitalism, isn't it?

Yes. Well, it's the easy side. It is, what we call, the slimeballs that come along, and there's always going to be that. Hopefully over time, those get weeded out. Capitalism is never an immediate cure-all; it's a long-term cure.

But you see a lot of immigration. You know, every time I turn around, I hear somebody with an Eastern Europe or a former Soviet Union accent.

Oh yes.

And I've been amazed at how the immigration is going on.

Oh yes. But again this is America. Everybody has always immigrated to America. So if they can, they're going to. Which is good for us. As I said, the immigrants are the ones that make us. Keep us productive.

That second generation.

Well actually, what actually happens is the first generation that is here works day and night and brings their kids up with all the education and all the training and the hard work ethic so that *they're* the ones that really end up going on to being wealthy and—

And they've also learned the language. That second generation. And the culture.

Yes. They've learned the language, they've learned the system, they've learned the culture, and they've got the education, and they've got a good beginning, so they're the ones that end up being wealthy. Then they spoil the third generation. That often happens. So it's an interesting phenomenon.

Well, I really appreciate this. I think—

Did you want to go over any of the other numbered pictures to—or were you—?

I had gotten all of them up to the Viktor Mikhailov office, and unless you wanted to tell me more about that—was that here? Let's see. You were starting to tell me a little bit about this right here.

Yes. Well, they came in a couple of days before the reunion actually officially got started, so we had them on the *Desert Princess* out on Lake Mead and gave them a tour, and then they came by

the house here, and this is actually where we got the first group of Americans and Soviets together when we had hors d'oeuvres and drinks in preparation for the next day's meeting.

So when did this Kazakhstan reunion take place?

After this one finished, I think it was a week later. And during this meeting, what ended up happening is the Russians had proposed that we were going to do this in Kazakhstan, and who was our guy in Washington at the time? [Victor Reis was DOE assistant secretary for defense programs in 1998]. Anyway, he turned to me and said, *You're going because you know these guys better than anybody else. So I ended up going there. Now I didn't look forward to that because I had my business running here and it probably cost me ten grand in income to go to that Kazakhstan reunion. But it was an eye-opener and it was good for the countries. Not good for me personally but it was good for the countries. So that was pretty much that. But like I say, the Kazakhstan one was kind of depressing because I think Mikhailov just went off and drank the whole time. He was really, really depressed after seeing what had become of—*

What had happened. Now you had said that they weren't able to do a reenactment there.

Right.

So they just kind of visited the old site, is that kind of what they did?

Yes.

I wasn't really sure what some of these were. What are they?

[00:50:00] These are sailing Lake Mead

One of your favorite spots.

These are actually in Kazakhstan. What city are we flying to?

It's not Semipalatinsk?

No, this is not Semipalatinsk. It's Frankfurt. Frankfurt [Germany]. So we were going in and out of Frankfurt. Is that right? I didn't know we had spent that much time there. We never went to the same areas we went to before except on a tour bus, where we drove by. Well, that's where the site was and, you know, everything was different, it was all open. The farmers were all in there farming and you're worried about nuclear testing and radiation and there were all the people doing it.

Oh. Well, now you've just made me realize that even if I wanted to take a tour of these historical sites, they would not be the same as the 1988 pictures that I'm seeing.

No. It's pretty much gone. And actually these were Soviet pictures taken; these weren't ours. But yes, this is in Mikhailov's office, taken by *their* guys. And again, we were the first Americans and he made sure he let us know that. Somewhere he actually had the JVE plaque. He was so proud of it. [Looking at photographs] I'm not even sure I can recognize half of these anymore. Except for that one. Another one of their tour buses where they really went out of their way to try to take care of us the way we took care of them, and of course they don't have the economic capability to do that.

Now are you talking about at the time of these meetings or—?

Both. These meetings as well as during JVE.

Well, I saw pictures where they brought china and tablecloths and several-course meals out to the work sites for the men. And I was really impressed with how they gave the best that they had.

The best that they had. That's right. And they didn't start doing that till after General Il'enko who was running their test site there came *here* and saw the way we were treating *their* people.

The next day, he's on the phone back to *his* people saying, You can pick it up a little bit.

Did you hear the requests that the Americans made for more vegetables? I mean did you hear about that? Were you—? Was that part of the supplies?

Yes, that was part of the supplies we shipped over, and then we shipped them a bunch of lettuce. Have you heard that story, where they thought it was cabbage and the Soviet cooks are cooking up this lettuce?

You heard all those stories, too.

Oh yes. Yeah, it was funny. So here we are being careful, trying to get the right stuff over to them and—

Well, the difference between a lettuce society and a cabbage society.

Yes, when that's all you know. The other thing that was interesting, on their test site, you'd drive around the cities and there'd be these nice green plots behind the houses, individual plots that people had for their garden. Beautiful. And then the common collective farm, run down and, you know, nothing, so yeah, I mean it was real easy. Like Katie [said], There's a capitalist. I own this. I get everything from that. This, well, I don't know where it goes.

Do you think that made the difference between their eating better and eating more poorly?

Oh yes. If they didn't have their gardens, they would have starved. Their collective farms were very, very poor producers. As a matter of fact, at the test site, a lot of the food we got was from their private farms. They would bring in their private food from their own private gardens and feed us.

Oh wow, and not from the collective farms.

No. They didn't have it. There wasn't anything.

Now how long were you at their test site, eating and all these other things?

The first time was six weeks, then we went back in with a small group to move the drill rig, it [00:55:00] was only two weeks. And that was it. Except for the ten-year reunion where we just ended up staying in the downtown and driving around.

Now you gave me a couple of names of people. Tell me what they would be able to tell me. Oh, let's see. Roger Hill. Tell me about him.

First let's talk about Don Eilers. Don Eilers was Mr. CORRTEX.

OK. He developed the CORRTEX.

He developed the CORRTEX and that became the measurement for, you know, our preferred measurement for a particular yield, for verification. Roger Hill was his understudy and was basically taking over implementation of it. Roger Hill was a Ph.D. physicist. Don Eilers was a bachelor degree engineer but he was in charge.

Oh really! Oh how interesting!

Oh yes. Yeah, he was a smart go-getter and, you know, really good. As a matter of fact, Roger Hill is the guy I turned to in one of our meetings and said, you know, after Mikhailov's saying, we're all the best physicists the Soviet Union had, and I turned to him and says, Well, here we are, just a bunch of farmers out here, cowboys, trying to make this happen.

Well, that was early on.

That was early on, yes.

That was early on. That was before you developed a sense of equality here, then. Well, what about Larry Perkle ?

Larry Perkle was one of the electronics techs that was trying to make the CORRTEX work and not give up any data. Part of the concern was giving up information as far as interstage reaction times, and you could get that from CORRTEX if you didn't block that information.

OK. So he was in charge of that, then.

Right. So that's why we came up with anti-intrusive devices for the CORRTEx cables.

Yeah. And Walter Wolff.

He was a test director.

OK, so he's like Joe Behne.

Joe Behne. Joe Behne was the Livermore side and Walter Wolff was the Los Alamos side. And we thought this was a joint verification test between us and the Soviet Union. Well, it was really between Livermore and Los Alamos. I don't know if Behne told you that story.

Yes. One side designed the test and the other one implemented it.

Implemented it. Exactly.

Yes. Which was unusual because they're very competitive.

Yes, at that point they were very competitive. I mean it was just like the Soviet Union, and that was another group, fun to bring together.

Well, in fact I think it was in Katie's interview where she said you can tell somebody [is] Los Alamos. You can tell what—and there's—

Personalities.

They have a Los Alamos personality and there's a Livermore personality.

Yes, and what we noticed is in the Soviet Union, it was the same thing. Their two labs, the original lab was the same personality as Los Alamos and the come-lately lab was just like Livermore, personality-wise, so it was just—

So do you have a descriptive term?

You mean that I define them? I guess the Los Alamos labs are more cowboys, kind of laid back but forceful and they're not going to give anything, but more laid back. And the Livermore lab, I would—are nerds.

Are nerds.

Yeah, maybe that's—

That was from Katie.

I wouldn't have used "nerds." I would've used more—

Techies?

Collegiate. Much more university-type snobs? But the proper term would be collegiate-type personalities.

Now don't tell them I said that. But we were going to ask Katie something that we were—

Oh, on seismology?

What was the DoD group in charge of—?

Katie McWilliam: DARPA?

Charles McWilliam: DARPA [Defense Advanced Research Projects Agency].

Katie McWilliam: Ralph Aldwine?

Charles McWilliam: Yeah, Ralph Aldwine. That was the group we were talking about in DoD that if, you know, we knew seismic didn't work, they would say seismic could do everything.

Well, your family's back so I think we're maybe at a good stopping point here, unless there's something else. Any other stories you want to tell?

I could tell stories forever, till the cows come home, to use a Los Alamos term.

[End of interview]



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C.McWilliam 3



C.McWilliam 3a



C.McWilliam 4



C.McWilliam 4a



C.McWilliam 5



C.McWilliam 6



C.McWilliam 7



C.McWilliam 7a



C.McWilliam 8



C.McWilliam 8a



C.McWilliam 8b



C.McWilliam 9



C.McWilliam 10



C.McWilliam 11



C.McWilliam 11a



C.McWilliam 12



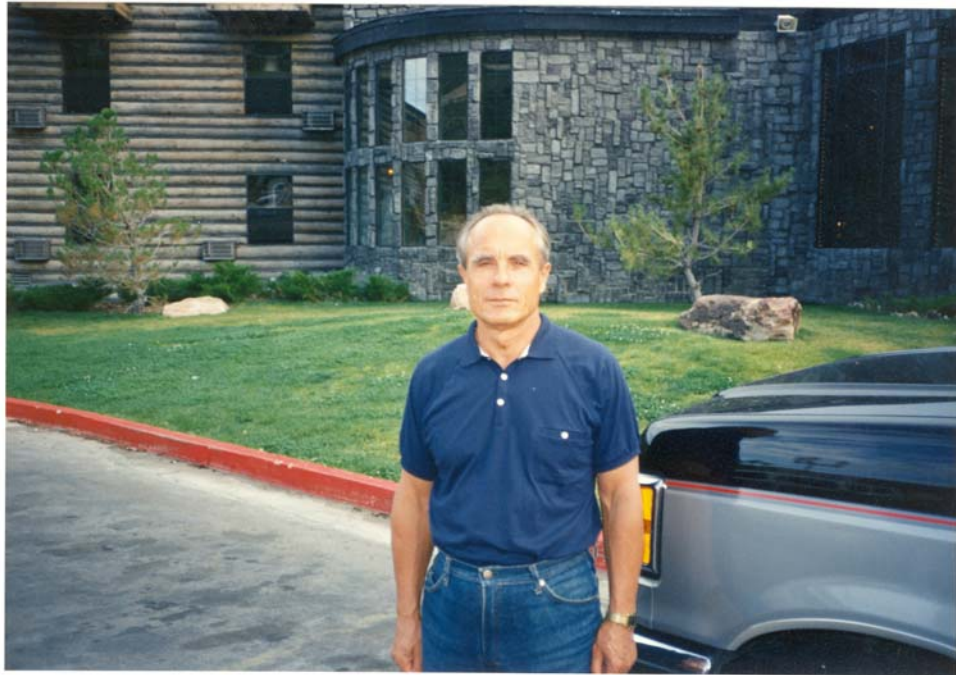
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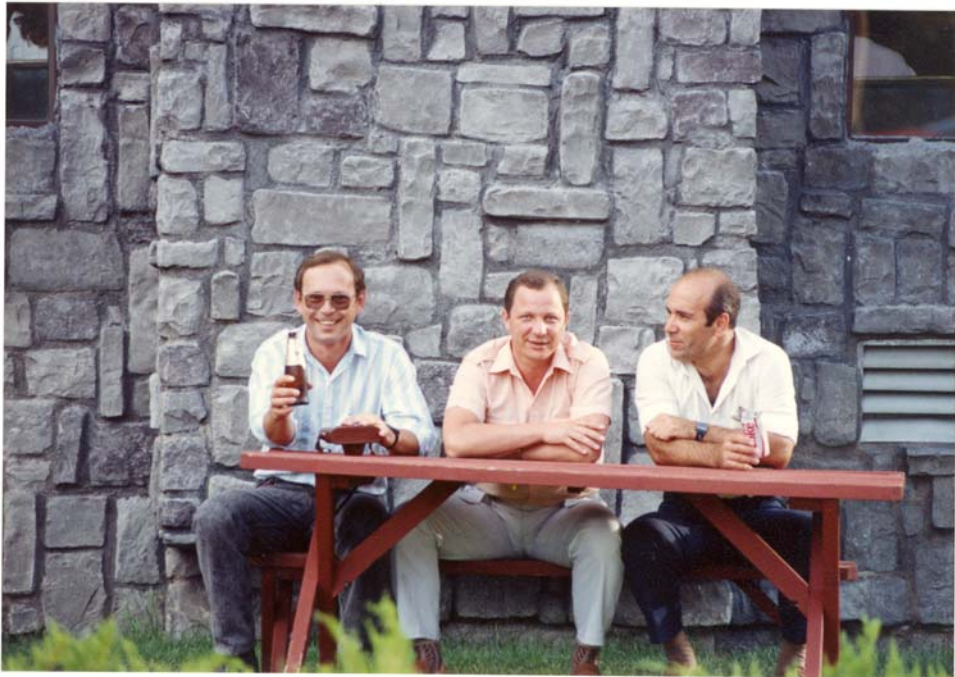
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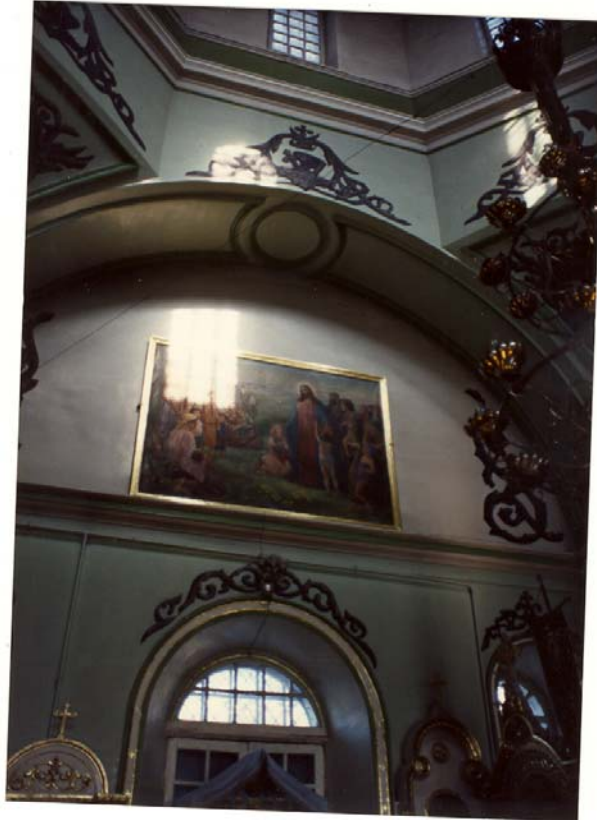
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