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

Interview with Troy Wade

June 16, 2004
Las Vegas, Nevada

Interview Conducted By
Joan Leavitt

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

Joan Leavitt*: I'm doing research on the JVE [Joint Verification Experiment] for part of my master's thesis, and as I've done research in the archival documents I have found you mentioned in about four different places. The first one—and what we're trying to do is fill out the things that aren't said—one of them is in November when you called Nick Aquilina and said,* The Russians are coming.

Troy Wade: [Laughter] The Russians are coming. The Russians are coming.

The Russians are coming. Now were you part of the summit? You were assistant secretary of energy at that time, but it seems like you were doing a lot with regard to international negotiations, and I'd like for you to kind of tell a little bit about what you were doing.

Well, when I went back to Washington the second time—I was there twice in the early 1980s and then I went to Idaho, and then I went back to Washington. And when I went back to Washington in 1987, arms control topics and arms control negotiations were very high on the Reagan agenda. And they were negotiating the Intermediate [Range] Nuclear Forces Treaty which was the very first treaty that actually reduced nuclear weapons from both arsenals. And, you know, Reagan, as a matter of policy, had said early in the 1980s or early in his first presidency that as a matter of policy the United States of America will seek a comprehensive test ban treaty. And so over the years that have passed from 1981 until I got there in 1987, there had been a lot of talk about a comprehensive test ban, but it was Reagan's famous mantra, *Trust but verify.* A comprehensive test ban treaty was thought by both sides to be unverifiable for

lots of reasons, lots of reasons, but just saying you couldn't do it was not acceptable either to the administration or to the president. The president said, `Find a way to do it. We clearly want to go to a comprehensive test ban.`

So were you working on ways to come up with mutually agreeable ways to verify?

Yes. Yes. Yes. Technical schemes that would be acceptable in a world where you also had constraints about—gee, what's the word I'm searching for?

Espionage?

Forgive me for stuttering here, but getting in and having access to information and secrets perhaps to which you were not entitled.

Espionage or—?

Espionage or just doing something that was too intrusive. "Intrusive" was the word I was searching for. You can't verify the yield of an underground nuclear explosion from great distances. You have to get close. Now "close" can be several hundred, several thousand, miles if you're talking about seismic signals. But if you really want to verify that the explosion was a nuclear explosion and get some idea of the yield, you have to be up close, and that's intrusive. We didn't want the Soviets at the United States, at the Nevada Test Site, and they sure as hell didn't want us at Semipalatinsk either.

And yet in one of the 1976 treaties it had language that suggested each country was to be given access to each other's explosion sites.

[00:05:00] That was the PNET [Peaceful Nuclear Explosives Treaty]. That was the PNET.

Yes, and when I read that I thought, well, who put that in and did they think it was realistic?

Well, let's talk about that for a minute because that was kind of a precursor to the JVEs. The Peaceful Nuclear Explosives Treaty, the PNET, said that it was OK to do nuclear experiments for peaceful purposes. But when people were thinking about comprehensive test bans, of course

you said, But you can't do any nuclear experiments for defense purposes. And the scientists said, Wait a minute, A nuclear device is a nuclear device and you gain information from it whether it's a Plowshare program of peaceful use, and so how can we assure that what the Soviets say is a peaceful use of a nuclear explosive is really that and not weapons development?

So is the verification more than just the 150 kilotons? It was whether or not it was peaceful?

Yes, that was the PNET thing. And so we had this very elaborate protocol where both sides built two complete sets of verification equipment. And the protocol said that if the Soviet Union told us that they were going to do a peaceful nuclear explosive test, we had the right to say we wanted to make measurements. They had a right of refusal—and there were lots of pieces to this—but assuming they didn't refuse, then we sent them two complete sets of all of this diagnostic gear and they got to take it all apart to see what's in every box and they got to select which set we could use.

Now is that the JVE?

No, this is the PNET.

This is the agreement in the PNET then?

That *led* to the JVE. It all started with the PNET. It all started with the PNET.

OK. But they didn't put any of that into practice.

No. No. But Lord, we spent tons of money developing the pre-procedures and the protocols and the equipment. But it was in fact the first step towards real verification.

Now was that all during the 1980s, or is that from 1976 on?

All during the 1980s. Well, 1976 on. Nineteen seventy-six on, but it was the first real honest attempt by both sides to make measurements on nuclear explosions that could be used for verification purposes. So, you know, the idea of how one technically made those measurements

began with the Peaceful Nuclear Explosives Treaty. And then when we got into the late 1980s, when the president and the world really wanted a comprehensive test ban treaty, because of the PNET experiences you couldn't just walk away. You couldn't say, We can't do it, because we had shown that there were technologies. And so we began to look at how you could verify that someone had done a nuclear test. And the question was different here because you know I won't remember the numbers now but there are—well, there are hundreds of earthquakes around the globe each day, and there are thousands of high explosive blasts each day, principally associated with mining, in almost every country around the globe. And, you know, some of the places are huge and so those explosions in open pits, for example in Nevada, send a seismic signal that goes around the globe. Well now, how do you differentiate between the seismic signal from a gold mine in Carlin, Nevada and a test at the Nevada Test Site? That's tough. That's very tough. And so finally the **[00:10:00]** scientists and the diplomats got down to saying, Well, we need to make close-in measurements. We have to be right there. And that raised then this issue of intrusiveness, and that's when the first discussions about, oh, what's the technique, the yield measurement technique that we—?

CORRTEX [Continuous Reflectrometry for Radius versus Time Experiment]?

CORRTEX. That's when the first discussions about CORRTEX really came up.

So a lot of your work in Washington, was it talking with scientists and diplomats then about—?

And Soviets.

And Soviets. So was that from all of the 1980s then?

Yes, and when I went back there in the 1980s, you know, the Department of Energy had—and still has—the total responsibility for the research and development tests, the production of nuclear weapons in the United States, and within the Department of Energy was this operating

entity called Defense Programs. And within Defense Programs was a group whose business was international arms control, and the person that headed up that particular division was the lead guy for a lot of the discussions that were taking place in the early and mid-1980s. When I got there, the president ratcheted everything up. He wanted more senior people involved, and I was the most senior DOE person in the weapons program. So suddenly I ended up sitting across the negotiating tables from Soviets, which was a marvelous experiment.

Now I had a couple of names that were Soviet officials. Were they different? We had [Igor] Palenykh and [Yevgeniy] Kutovoy, Sergei Zelentsov, Viktor Mikhailov.

I know those guys, yes.

Yes. They came in January.

They came for the JVEs, yes.

Yes. Were these different Soviets?

Different Soviets, yes. Yes. Before January of 1988 the United States State Department went to the Soviet foreign ministry and so there were career diplomats representing both countries—backed up by technical people or administration people like myself—but it was the diplomatic people that were doing the discussions.

And you got to see [Leonid] Brezhnev's people versus *[Mikhail] Gorbachev's people, is that right?*

I saw only Gorbachev's people. See, in the late 1980s Gorbachev was there, and so when I got involved I saw principally Gorbachev and Shevardnadze was the foreign minister.

Yes. Yes, [George] Schultz and [Eduard]Shevardnadze gave joint statements together.

And I should've brought in to you today to show you, but I have framed at home the front page of the Moscow newspaper, *Izvestia*, and it's in May of 1988 and it's in the Kremlin. It shows

Schultz and Shevardnadze sitting at a table and they're signing the JVE agreement. And Gorbachev is standing behind Shevardnadze, and Reagan's standing behind Schultz, and then those of us that were there *with* him that were part of this negotiation are standing behind. A very fond memory of mine and a very, very, you know—a long way from the Nevada Test Site.

Really the height of what you could dream for in your career, I'm sure.

But you know it began to come to a head when the diplomatic channels advised by **[00:15:00]** me and laboratory people and others on both sides said, `OK, let's try and make close-in measurements like CORRTEX.` And we all agreed to that, and that's when I called Nick and said, `The Russians are coming, the Russians are coming.`

[Laughter] Did you really say that?

Yes, I did.

That's what I titled my paper on the JVE. I didn't know you had said that.

I really said that. I really said that.

Oh, that's great.

And then it got exciting because, you know, we said for our purposes, to make the CORRTEX measurement, we needed an instrument hole thirty meters from the emplacement hole where the Russian device was going to be tested. We needed an instrument hole thirty meters center to center.

In Semipalatinsk.

In Semipalatinsk, and it had to be *absolutely* straight. Now when they came over here they didn't have that kind of requirement because they were using a different technical technique for their measurement. So they said to us, `We can't drill a straight hole`. And we said to ourselves, `Come on, this is the nation in the world that has more natural`

resources than anybody, more drill rigs, so what do you mean they can't drill a straight hole? So our side told their side, Drill the hole. And so they drilled it and Nick sent over people from the Nevada Test Site, the first sort of people in there—

Yes, the drillers and geologists.

—to see if the hole was indeed perpendicular and it wasn't.

And we said, This hole isn't straight.

And they said, We told you.

So then we had this huge dilemma in Washington about What do we do next?

And the Soviets finally said, We told you we couldn't drill a straight hole.

And we said, We've got to have a straight hole, so we'll come and drill it. We'll drill it ourselves. And most people, certainly Troy Wade, didn't believe that they would accept because this whole intrusiveness thing kept creeping in and we had ongoing discussions about these measurements because, you, in fact, can use your instrumentation to make measurements which will tell you more than just the yield. That's intrusiveness of a technical kind because that begins to look at their designs. That's sovereign information, and they didn't want us having that kind of information.

How do you protect each side's secret and do something like this?

And we sure as hell didn't want them having—so this intrusiveness was a big issue, and so when we said, OK, we'll come over and drill the hole, *I* thought the ball game was over. I thought we would go back to square one.

It was a deal-breaker.

And you know they said, OK.

Then that was this phone call to Nick:

Nick, you've got to go to Semipalatinsk and drill a hole, and you got to take *everything*: the drill rig, the drill pipe, the bits, the mud, the drillers, everything.

I was amazed at how heavy, how much tonnage, that was.

Well, you know, I've known Nick forever and we had some fun conversations, you know.

I bet. I bet. I wish they had been taped.

[Nick said]You got to be kidding me.

[Troy]No, Nick, you got to go to Semipalatinsk and drill a hole.

Nick of course is the expert here, but it was like five C-5s full of equipment, loaded at Indian Springs [Air Force Auxiliary Base, Nevada], flown to Helsinki where Soviet pilots and navigators got on board. And this was another first because these were the first U.S. military airplanes ever allowed into central Soviet Union.

[00:20:00] *Yes, he said the young pilot who got that job was a little nervous.*

Hey, everybody was nervous. *Everybody* was nervous. Everybody was nervous, but we got it done. You know, that's a fond memory of mine. Associated with that fond memory was the cost of it. Because of the way the United States government does business, the rest of the United States government just looked over at me and said, Go drill the hole and pay for it.

Who was going to pay for this?

And I said, Excuse me? [laughter]

Out of your budget, the Department of Energy's budget.

Yes. And I said, OK, there must be some special pot that I—

Some magic fund in the sky.

So I think drilling that hole cost like $12 million or something like that—if you paid, you know, the cost of the airplanes and all of that, it was very expensive.

My other fond memory of course was in January of 1988 when the first Russians came here. And I flew up to New York with a DOE airplane and a U.S. delegation. In fact I was the senior U.S. official at that time, and we were to meet the Russians in New York and bring them to Nevada for the first time. And Palenykh, Igor Palenykh was the senior Soviet guy—

"Delegation to the nuclear testing talks in Geneva."

Yes. Yes. But he was also the senior guy coming to New York to come here for the first time. I had met him before.

He was your counterpart then.

For that event he was my counterpart. He was a very senior Soviet diplomat and had been in the business for many, many years. And at that point I had not met him. I knew about him. So, we go to New York and we'd made arrangements to go to the Pan American Club like, you know, the Delta Crown Room and that sort of thing. We *rented* the Pan American Club. The deal was that the Soviets would land at—where was this? This was JFK [John F. Kennedy International Airport], I think, in New York. The Soviets would land and they would be escorted to the Pan American lounge, and we would meet them there and we would talk and we would have some refreshments, and then we'd all go out and get on the DOE government airplane and we'd toodle off to Las Vegas.

Well, I was just as nervous as the pilot because this was certainly a grand experiment for *all* of us. There were people with me who were from the diplomatic corps who were used to this sort of thing. So here we are and we're standing and, we are there and we're in the lounge and we get the word that the Soviets have arrived. Now understand they'd flown, many of them, from Semipalatinsk to Moscow so this was twenty hours by *that* time. So they just by nature weren't the happiest campers in the world. And I remember, the protocol was that I'm supposed

to stand by the door with an interpreter right behind me and when Palenykh comes out as the head of the delegation he'll have an interpreter with him, and **[00:25:00]** we're supposed to shake hands and kind of exchange oral credentials: How do you do? I'm Troy Wade and I'm so-and-so my job is _____ and I want to welcome you on behalf of the President of the United States.

Now I'd never done *anything* like this before, but I'm standing there and pretty soon these guys come in and they just looked dreadful. They looked like they'd been on an airplane for twenty hours.

They didn't want to talk to anybody.

And you know I'm standing there all smiley-faced: How do you do? I'm Troy Wade and I'm—.

He said, I know who you are, and shook my hand and just went by. All they wanted to do was sit down.

And so then we got on our airplane and headed for Nevada, which was another five hours, so these guys were—

Had no sleep.

No sleep. And so part of the arrangement was that on the flight from New York to Las Vegas, Mr. Palenykh and I were going to have a conversation about what we would say when we got to McCarran Airport [Las Vegas] because there was going to be a big press conference when we got to McCarran Airport. Well, he wasn't much interested in talking, you know. He was physically exhausted and we were all mentally on edge because this was a big deal. This was a big deal. And so I had been instructed to say, that I'm not going to talk about anything but the importance of this event and how we're trying to work together and, please stay away from treaty violations and other Soviet—

He said, `Fine, fine,` and of course paid absolutely no attention to me. And when we got here and we landed at McCarran—and at that time all of the government EG&G [Edgerton, Germeshausen, and Grier] facilities were at McCarran. I don't know how long you've been here, but where the second main runway is at McCarran, east-west runway, was where all of our facilities were, and our airplanes. They're now out at Nellis [Air Force Base], called RSL [Remote Sensing Laboratory].

Anyway we landed and press conference in this hangar. This was a big deal because this was the first time Soviets had been—a delegation like this had been in Las Vegas and the first time *anybody* was ever going to the test site. I think Nick introduced me and I made the appropriate speech for the senior U.S. official, about how delighted we were to have them here and we were working towards this and that and yes, they're—

And then Palenykh got up and said, in effect, `We really don't want to be here, we don't trust the United States, we don't believe these measurements can be made.` You know, it was not a [laughter].

Not friendly—

No, it was not friendly—

And this was to the press?

Yes. So then we loaded them all on a bus and took them to the test site. Now remember, they'd been twenty hours from the Soviet Union to New York, five hours to here, two hours on the ground, and then a two-hour bus ride, and these guys were basket cases and they were not happy campers.

And then we started the next morning with an official meeting in the Steak House at Mercury, a little restaurant called the Steak House, which we turned into a conference room out at the test site. And that was where I really was first struck by the fact that, you know, here I was

after spending—and you've heard this from Nick and other people but it really struck **[00:30:00]** me—here I was after spending most of my professional career preparing to fight these bastards, now I'm sitting across the table from them and I'm about to take them out to show them the Nevada Test Site. And it was a very, very strange feeling. Very strange.

Yes. Here I am, showing this to the enemies.

Looking back, you know, it was just a wonderful opportunity for me and Nick and others, but it was really a strange feeling.

It was a cultural shock.

Yes. Yes.

And a lot of the workers at the test site had to deal with those same feelings.

And as you would expect, you know, the tens of thousands of people who've worked at the test site over the years have all been patriots. And since I'd had a different view from being in Washington, I knew we had to accept this and why, but there were a lot of test site workers, you know, cooks and drillers and miners and operating engineers who didn't want these guys there, didn't like the fact they were there. This is the enemy. So that was the beginning.

That is so fascinating. I mean there must've been some tension for a little while from both sides.

Well, huge tension, and of course we learned later, you know, one of the agreements in Washington, was that these testing teams would be drawn from the rank-and-file of the testing program, if there is such a thing. In other words, you weren't supposed to hand-pick people to do this because you wanted the—well, we complied with that. They did not. They brought the very best people they had, like Viktor Mikhailov.

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

Yes. Brilliant. Brilliant.

Yes. I Am a Hawk.

I Am a Hawk. Yes.

Yes. And the good things that he had to say about that experience.

And boy, there was *no* question about the fact he was a hawk, and there was *no* question about the fact he'd bomb us in a second if he had the opportunity.

But yet he describes his intense curiosity about what the people at the test site were doing. There seemed to be the understanding that, yes, you are enemies but there was a scientific curiosity in the work that you were both doing.

Very much so. Very much so.

Which seemed to overpower enemy suspicion.

Well, it did. Another thing that makes this such a unique event in not only Cold War history but in history is that the United States intelligence community really didn't know very much detail about the Soviets' nuclear weapons program.

The CIA [Central Intelligence Agency] and the FBI [Federal Bureau of Investigation]. Is that what you're talking about?

And the DOE intelligence people. We just didn't know very much. We suspected they knew a lot more about us than we did about them because of our open society *versus* their closed society. Their Livermore, Arzamus, was a closed city and their Los Alamos, Semipalatinsk, was a closed city. No U.S. people had been there or were allowed there, so we had no good human intelligence about the kinds of people or the quality of the people. And, up shows a guy like Viktor Mikhailov who was just a very high-caliber scientist. We sat back here and said, Hey, these guys are good. We ought to worry more. These guys are better than we thought they were.

But it was, you know, really in *my* mind one of the signature **[00:35:00]** parts of the whole JVE thing was that we got our first close look at them and they got their first close look at us, at how we tested and what kinds of people we were and how good our technology was and that sort of thing. And you know, we knew they had KGB agents in this delegation.

They really did?

Oh yes. Oh yes. And we had appropriate people in our delegation. And it was funny, and Nick may have told you this, you know, Nick had arranged to bring all of these people down to see Siegfried and Roy. And many of them in this initial delegation, as well as most of the ones who came later to do the experiment, had certainly never been to the United States. Some of them had never been out of Semipalatinsk, for example, or their labs, and they couldn't believe what they saw here. And when we took them to Siegfried and Roy, they thought this was all staged just for them. We had marvelous seats right down in the front. They tried desperately to not show much interest, and certainly to not show any emotion. Some of them had a lot of trouble because it was a hell of a show. And then as you may have heard, at the end of the show we stayed. Everybody else was taken out of the showroom. And we got all of these people up on the stage on risers, and out came Siegfried and Roy with a couple of white tigers, and we had our pictures taken.

That's a marvelous picture.

I can show you the picture and you can see the two KGB guys there, because they didn't want their faces in this photograph.

I've got the picture.

And they're the ones that are kind of in the back row, kind of, you know.

Really!

Oh yes.

Because I think I have the picture in my briefcase. That's one of the things I gathered together for my JVE first paper.

And they didn't want their pictures taken. We knew they were there. They knew tons about each one of us and we knew tons about each one of them, and it just made you nervous.

Yes. Well, there was a [Las Vegas] Review Journal *article I remember that said that there was going to be KGB in the delegation. And I didn't know if he had said that because it was paranoia or if it was fact, but it was in an editorial and it was one of the great concerns that they had.*

And they were there. And they were there.

And they were on your chosen promised land, weren't they? Seeing secrets that had been even kept from the press, from citizens, and all of a sudden they were there.

Tough on us.

I bet.

Tough on us. But as Viktor said and as you've heard others say, it didn't take long until we gained a great deal of respect for them and they gained respect for us.

Was that living side by side and seeing things? Nick said about Frances Guinn that she would take them to different places on weekends and they got to see America.

They loved Frances Guinn.

Yes. They got to see—

Particularly Viktor, who like girls anyway.

Oh, did he?

Yes. Yes. Viktor likes U.S. girls. And U.S. cigarettes.

Nick said that they liked his wife too, Freda.

Oh yes.

Yes. That they were in her home—

Everybody loves Freda. Everybody loves Freda.

Yes. That one of them gave her some slippers, just a present, and I guess Nick said he was in Geneva and I can't remember who it was but he said, These are for Freda, and it was in front of everybody, and he said he was the only one who got a gift- and it was for his wife. Nick said she wore those slippers until they wore out, with fond memories.

[00:40:00] Well, you know, part of the deal was that the host country would bear the expenses for these two experiments. So that meant when the Soviets were here, we paid for everything.

And you were talking about approximately, the most, forty-five people at one time.

Yes.

Yes. It was kind of limited.

But it meant that—and we tried—because we are the country we are and the society we are, you know, to take them to Nick's house and take them to southern California.

Yes. See the ocean.

To see the ocean.

They'd never seen the ocean before.

Yes, and you know I didn't realize at the time, I didn't realize until later, how important *those* things were in terms of the relationship between our two countries. You know, let me fast-forward to the end of the Cold War and the Soviet Union had collapsed and there was calamity everywhere. And almost immediately the first thing that happened was that people from Livermore and Los Alamos went over there to the closed cities where they had never, you know, U.S. people had never been allowed because they needed help. They needed help. And I think if we had not done these JVEs and had not established the trust and the communication channels

that we established as part of the JVE thing, that beginning to work together after the Cold War would've been a lot more difficult. A lot more difficult.

Mikhailov writes about, I think there was a ten-year reunion of the JVE where many of them came back. In his book he talks a great deal, almost the comparison between the amount of resources that the United States had to spend on their nuclear program versus *the amount that was* not *going into the Soviet program, the animosity towards the Soviet program for the people themselves. In fact there was one place where he said that the anti-nuclear movement was called Nevada Semipalatinsk. I thought that was interesting, that over there Nevada has a very particular meaning. In Kazakhstan they were more aware of Nevada than perhaps average citizen Joe thought, you know. It seems like the test site is a little spot in the desert and were we really a target? And you have described the Nevada Test Site as a primary battleground of the Cold War. I think that's a marvelous characterization. What do you mean by that, and could you kind of, you know, describe the things you saw that have you feel that way.*

Well, you know, I believe that the nuclear deterrent [pause] nuclear weapons ended World War II. The nuclear deterrent which was designed in Livermore and Los Alamos and Sandia, but perfected at the Nevada Test Site, kept us out of another major world conflagration like a World War III. The fact that we had at one point massive numbers of nuclear weapons—which personally always troubled me—but the fact that we had nuclear weapons and the Soviets knew that we could wipe them out should we choose to do so kept them from doing anything silly. And ultimately when Mr. Reagan—and there's a lot of controversy about how he did it—but when Mr. Reagan moved into the Strategic Defense Initiative, you know, we were technically **[00:45:00]** better than the Soviets in a lot of areas but not very much. We didn't win the Cold War because we were technically better. We outspent them. We just, you know, the Soviet

economy was—Communism was crumbling under its own weight. And I'm not expert in this at all. I just read this. But the Soviet Union was beginning to implode because of its own weight, and when you added to that the additional costs of trying to keep parity with the United States, we won. And I think that makes it very easy and I think correct for me to say, Look, the things that deterred World War III and deterred North Korea from using nuclear weapons and deterred the Soviets in Cuba from doing something crazy, all of those things came from the Nevada Test Site.

*The Nevada Test Site and the psychological impact of deterrence. Tom Reed in his book [*At the Abyss: An Insider's History of the Cold War *(New York: Presidio Press, 2004)]—I read the book on his views.*

Excellent book. Excellent book.

And the many times where on both sides the button was very, very close to being pushed and there was forbearance on both sides because they knew that if they pushed it they couldn't stop it. And the whole idea of nuclear warfare was so terrible that it made them pause.

Well, Tom Reed describes it much more eloquently and much better than I do, but he's dead on. Deterrence only works if the enemy, whoever that enemy may be, *knows* you can come and get him. How you do that is changing in today's society, but in simple Nevada Test Site terms, deterrence only works if the enemy knows that you can destroy them and their targets. And so you can get your finger close to the button but you don't have to push the button because *they* know you can come and get them. And we knew they could come and get us too, and as Tom Reed said, thank God for some of their generals who, you know, disconnected their [laughter] their football—

Yes, I remember that.

Which I think was extraordinary. Extraordinary. You've also heard me say, nuclear weapons are not nice things. They are weapons of war and weapons of death, weapons of destruction, and—

And it was your earnest hope to never have them be used.

Absolutely. I'm one of a rapidly declining population who have seen atmospheric nuclear tests with their own eyes. Now I was there. I saw them as an observer because I was at the test site. At that point in time, very early in my career, I didn't have any—

Nineteen fifty-seven, I think that was.

Nineteen fifty-eight and nineteen sixty-one. I didn't have any management role but I saw. They're awe-inspiring things to see, and if you ever see one you never forget it.

And yet you've seen that there's a problem if testing is stopped on both sides, that simply banning nuclear weapons doesn't really solve the major problems.

Well, I don't think it does, and let me tell you why I don't think it does. You know, the world has changed. In a sense it was much easier for us when we had a predictable enemy. The Soviet Union was a predictable enemy. The Saddam Husseins and the Moammar Quadafis and the whatever his name is in North Korea are not predictable. We could **[00:50:00]** deal with the Soviet Union because we could sit here in the United States and say, `OK, if we ever are forced to do it, we are going to put 200 warheads over Moscow.` And if one of those 200 didn't work, nobody would ever know that. Certainly not the people in Moscow, and certainly not us. But if we have to go after a deeply buried, hardened target in North Korea and have *one* opportunity, deterrence is only good if the enemy knows you can come and get him. And so if we only have one opportunity, then we have to have a weapon in which we have enormous, you know, 99.99999 percent probability that it will work as designed, and I'm not sure we have that. So I think, you know, we need as a country to be looking at whether or not we

can go get that hard target the way we need to. And that's what the big discussion in Congress earlier this week was, where Congress ultimately supported the money requested to do advanced concept work on what they call the robust earth penetrator, which would be the new bunker buster. It is *possible* that if they go ahead with that and design that new warhead and do all of the things on the computers that we are able to do now, that somebody's going to say, `Wait a minute.` Since deterrence is only as good as the one thing you have to go get that target, maybe we ought to go do a test to make sure it *really* works.

Now if *I* were the President of the United States, I'd want that last assurance. But we'll see.

Now the fall of the Soviet Union created some unexpected problems though, didn't it, with Soviet technology kind of going out into different nations.

Well yes, I mean it created problems in several different ways. You know, the U.S. side worried a lot, still worries, about if the Soviets really have all the warheads, that they had deployed them, you know, all over the Soviet Union.

Or even plutonium and some of the other parts from making the bombs.

Yes, but if you just started with the weapons, you know, I remember in the early 1990s a U.S. diplomat saying—part of the Clinton administration, when asked the question about do we know do the Russians have absolute control of *all* of the nuclear weapons that they had deployed, and he said, `We are assured that they have control of 99 percent.`

Well, that made a lot of people very happy. It made me very nervous, you know. One percent of—

Is a lot of power still.

Yes. Yes. So I worried about the weapons. I worried about the nuclear *material* because they had a *lot* of nuclear material. And then, you know, people worried about the technology. These

people were the Viktor Mikhailovs of the world that their laboratories weren't getting paid, and it was so bad at one of the nuclear labs that the director, you know, committed suicide because he was watching his laboratory deteriorate and his people tempted, and he couldn't control them and he didn't have any money and he just couldn't deal with it. I don't know if that's in Tom Reed's book but I've read that several places. That is a known fact, that one of the Soviet lab directors just took his own life because he couldn't deal with trying to hold it all together. It was just pretty sad.

Yes, I'll have to go back through that because there's things I'd like to rethink again as I go through it. I know Mikhailov's book, the frustration he felt that compared with the money that the **[00:55:00]** *United States could spend on the nuclear program, that the Soviet Union had dedication, they had scientists, but if they didn't have work, that they were facing a lot of problems. And there was a lot of hostility, it seems, under Gorbachev's administration, where the people blamed their problems onto the nuclear program. It was taking bread out of the mouths of the people.*

Did you see where they—were you able to compare at all their safety measures compared to the containment-type safety measures that the test site used?

Well, you know there are others who are much more qualified to answer that, you know, I'll give you my impressions. They certainly worried about containment. They certainly did good containment design, but not like we did, you know. If they had a containment failure, if they had a leaker, it wasn't nearly a problem to them that it was to us. Again it's the difference between the two societies. I think they were behind us in containment, but they were trying.

What they didn't have was people like Dina Titus? Is that kind of what you might—?

Well, I've been thinking about that since I've gotten involved with this museum [Atomic Testing Museum, Las Vegas, Nevada] and gotten much more focused on history. It's been kind of fun. I think about a lot of things, and you made the point that the Nevada Semipalatinsk peaceniks, the protesters over there, I think by and large protested because of the resources that were going into the nuclear programs when they had no food. And if you look at Kazakhstan, that's where their Cape Canaveral was, you know, that particular province. Many of their research facilities were there, that particular province of the Soviet Union and now one of the states of Russia, had *enormous* government money going into these programs, surrounded by just dreadful abject poverty. That was the building block for the protests in the Soviet Union. Over here, people protested on moral grounds, you know, from the people who just didn't like nuclear weapons, like Martin Sheen and Patsy Schroeder, the Native Americans who think, you know—

You're disturbing the environment.

—the land belongs to them. The Ruby Valley Treaty of, what, 1860 [1863] gave them the land. To the Dina Tituses of the world who believe that the government had deliberately lied and covered up stuff in atmospheric testing days and injured people as a result of that.

Downwinders, yes.

The Downwinders. It was interesting, I hope you—well, it just shows what a strange world it is. I was in a meeting yesterday afternoon with the chancellor of the University and Community College System [of southern Nevada] and two regents and some other people, and we were talking about—matter of fact, we were talking about Yucca Mountain and the educational requirements for Yucca Mountain. And one of the regents was Brett Whipple, and his father was the first identified Downwinder who died from cancer in Alamo. So isn't it kind of strange that here we **[01:00:00]** are now where his father was allegedly injured as a result of activities taking

place at the Nevada Test Site and now, you know, fifty years later we're trying to see how activities at the Nevada Test Site can benefit the school system of Nevada. Same people. Wade that made bombs and Brett Whipple whose father died from fallout.

But anyway, that's a sidebar. I'd be interested in *your* views but I think the Soviet protests were largely based on economics and the U.S. protests were morally driven.

[01:00:47] End Track 2, Disk 1.

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

I'm a very fortunate person. I've had the opportunity to view this battleground of the Cold War from a lot of different positions.

I think it's wonderful. Your perspective is extremely unique from a Nevada Test Site point of view. I'm the only graduate student [at the University of Nevada-Las Vegas]with a background in European history that's actually working on the test site history, and to get it from this international perspective takes it out of the realm of Nevada history and even of United States history. You really are quite a key person to get to shed light on the Soviet side. I'm hoping to get more and more into the Cold War documents that are coming out of the Soviet Union too. I think comparing them to what's getting declassified is going to be truly fascinating. I think it's going to be able to answer some questions that perhaps peace protesters have had, people who have had questions that couldn't perhaps be answered before.

One question that I had was I've heard references to—

Could I stop you for one second?

Sure. That's just fine.

Sorry about that.

That's fine. You have a busy schedule.

I'm supposed to be retired.

Well, that was back in 1990, wasn't it?

Nineteen eight-nine, I retired and it's gone downhill from there. [laughter]

Well, you don't just get to play golf and put your grandchildren on your lap?

And one great-grandchild. No, but, well, I need to stay involved. I'm not the sort of a retired person who can sit and—although I did plant some flowers yesterday—I have to stay involved. I am in fact a little more involved than I wished I was, and this museum is not only a labor of love but an enormous consumer of my time and energy, and I will be absolutely delighted when we get it open.

Well, I think there's a very valuable story that needs to be preserved and passed on to the new generation, and here—

That's why Dina [Titus] and I have become such good friends in the past few years. Wasn't always the case.

It's a real curious thing that both of you are part of this museum, because you do have different points of view and like you said, she has put your feet to the fire through the years. But it's interesting that in the United States a dialogue can take place, whereas in other countries a dialogue doesn't get to take place.

That's exactly right.

Can you tell me what the Vela Uniform Inspection and Control Recommendations, what the relationship with the Soviet Union was under that kind of verifying thing?

I don't know a lot about Vela Uniform, only that it was the U.S. program to look for evidence of nuclear testing worldwide—not only in the Soviet Union but worldwide—both seismically and

[00:05:00] then later from satellites. So those were the early, the very first verification attempts in our business.

And I think you said it wasn't friendly.

It was not what?

Friendly, with regard to the Soviets.

Oh no. No, it wasn't friendly. It wasn't friendly. Well, with other people, you know, our verification techniques have—we've watched, now unclassified, what we thought was Israel developing nuclear weapons. We've watched India and Pakistan and known that they've tested before they said they tested. The verification techniques the United States government deploys are worldwide. We still look at all of the, quote, potential proliferators.

It's amazing how much modern-day technology has come out of the defense program.

Oh yes.

Between the satellites and computers. Is there others that you would kind of—the things that we just take for granted in our daily life. Cell phones. Navigation systems.

Yes, I think, a very large benefit of this country's nuclear weapons program has been the *kinds* of technology that were developed at Livermore, Los Alamos, and Sandia and in most cases tested at the Nevada Test Site. But you know that's where miniaturization was born, of small circuits, that's where miniaturization of mechanical things was born. In the new museum we're going to have a machine—Sandia has built switches that are safety switches in nuclear weapons that are actually mechanical where you have gears turning against gears that are so small you have to look through a microscope to see them, and we're going to have one of those here. The very first fiber optics were developed and tested at the Nevada Test Site. The very first use of advanced computers was at Livermore, Los Alamos, and Sandia. When I was assistant secretary for

defense programs I owned more Cray computers than anybody in the world, and they were all at the weapons labs. And from that has come advances in nuclear medicine, *enormous* advances in nuclear medicine, enormous advances in diagnostic techniques that are used with—so there've been a lot of spin-offs.

That's incredible. Now tell me what you remember about the Kearsarge (JVE) event [Operation Touchstone, 1987-1988]. You were here for that, weren't you?

I was here for that.

What do you remember?

Well, I remember it as being sort of an enormous theatrical production in that there was a lot of world attention, there was a lot of press here from all over—

Yes, you were opening the test site not only to the Soviets but to the press.

That's right, which was—

And that was unusual too.

Very unusual. Very unusual. Hadn't been done for years and years. We had large delegations of very, very senior people here. I was here. I was not the head of the U.S. delegation; Ambassador Paul Robinson was at that juncture. But the event itself was very ceremonial for me and the part that I played in it off to the side. I was just as interested and watched to see if the technical objectives of the test were realized. Did our bomb go off? Were they able to make measurements and was their data what they wanted it to be? I was very interested in that, but we had to get all of the ceremonial stuff done as well.

[00:10:00] *Now there were also peace protesters that drew attention to that too, and some of them, that must have been kind of frustrating for this event of the two countries coming together, to be protested.*

Well, yes, I remember saying at the time, Isn't it kind of ironic here that we have protesters again who don't understand [that] what we're trying to do here is to find a way to stop testing. And so they oughtn't to be protesting; they ought to be cheering.

Yes. That's probably been the most difficult part about working in this industry, hasn't it, that there are those who should be cheering when they're protesting?

Yes, and it's because they just don't understand. They don't understand, and that's OK. To most people a nuclear test is a nuclear test and it's an evil thing no matter what the purpose of the test is. And so to the protesters—I'm very naïve and I believe that in that particular case people could've sat down with the protesters ahead of time and said, you know, Do you really understand what we're trying to do here?

But the world doesn't work that way.

Well, I'm hoping that the museum is able to tell some of the story that they haven't been able to tell before. Because I know even the term "Joint Verification Experiment" is a strange term to even understand what exactly is happening there. Now it was the two countries designing a test, or each having a part in the performance of a test, is that accurate?

Yes. Yes. Yes. But back to this word "intrusive." To allow us to get that technically close to their sovereign rights and *vice versa* was a real first. Now you know I've learned, Joan, that we don't—I've been gently reminded of this by my friend Mr. Aquilina. The museum as it's now designed and being built really doesn't highlight the JVEs as much as it probably should. I think what we will do is—this thing we call the changing exhibit gallery downstairs where the [Francis Gary] Powers stuff is right now, and we're about to change all of that out—and I think in the next year or so we will do a whole exhibit just on the JVEs and the tenth reunion. I was the master of ceremonies for the tenth reunion.

Really? Nick showed me a picture of that reunion, yes.

Well, did Nick tell you about the swearing-in ceremony at Semipalatinsk?

Yes. Joe—

Joe Salgado. I swore in Joe Salgado. Now there was another strange experience. We're standing there in the day room of the barracks out at this very remote test site. I'm sure Nick told you the story. Joe Salgado was deputy secretary of energy but he also had been nominated by the president and confirmed by the U.S. Senate to be the U.S. ambassador to the world nuclear organization, [International Atomic Energy Agency, IAEA]. By the law of the United States you can be nominated by the president for any position and the Senate can confirm you for that position but it ain't a done deal till all the paperwork's **[00:15:00]** signed. You know, it's the world we live in. You've got to have a piece of paper to cover everything. So I was given a Bible and the oath. And I was a little nervous about taking a Bible into the Soviet Union. It's not just sort of the thing you find in the average Soviet hotel room. You don't find a Gideon Bible. So they said [to me,] Would you get word from the U.S. Embassy in Moscow that Mr. Salgado has been IAEA to the International Atomic Energy Agency. You *will* get word through the U.S. Embassy in Moscow that the paperwork has been signed, at which point you swear in Mr. Salgado because he's flying from Moscow to Geneva.

So this was another thing where Nick said, You want to do *what*? Because he had to go explain this to—I forget his counterpart—the Nick Aquilina of the Soviet test site.

Let's see, I don't know if that's General Il'enko?

Yes. Yes. Il'enko. He had to explain all of this to General Il'enko. And as Nick may have told you, I actually learned that the message had come through from the Soviets before I heard it from the U.S. Embassy in Moscow, which tells you something too.

They're quick, aren't they?

Ultimately I got the word, and so then we had this ceremony. And it was another really strange part of my life, because here we are in the middle of—the Cold War's still going on—we're in the middle of the Soviet Union at their test site, one of their prize locations, and I'm saying to Joe Salgado, `Do you swear to defend the United States of America against all its enemies?`

And they're all standing around.

There they all are. And of course they got a big kick out of this and they dressed up in their finery and the admirals and the generals, and you know they love—you know how they like medals and they like pageantry. Geez, these guys had tons of medals on. And so you've got, "defend against the enemy," you know. You can just count them. There they all stand. It was really [laughter] another really unique thing.

Yes. They didn't know what was going on. It was just a ceremony, probably.

I think they did not know the significance of it at the time, you know, I don't know. I'm told it's happened since but Salgado was the first U.S. official ever sworn in to office in the Soviet Union. And I did it.

Do you have any other memories of Shagan [JVE test] and being over in Semipalatinsk? You were there for what? Was it a week that you were there?

About a week, yes. Well, I remember when we got out to—well, you know, the drama began when we got to Moscow because they lost my suitcase. And so we had flown—there were a lot of people coming up from Geneva, including Ambassador Paul Robinson, and then flying in from the United States were Joe Salgado, who was the head of the U.S. delegation, and me, and the head of the Arms Control and Disarmament Agency, and two or three other people. And we flew Pan American [Airlines] from New York nonstop to Moscow, and everything got there

except my luggage. So, you know, I called up Paul Robinson who was still in Geneva and said, Paul, have Barbara, who was then his secretary, now his wife, go downtown and get me some skivvies and some socks and things like that, you know, because I didn't have any clothes. So that was a little traumatic. Then we got out to Semipalatinsk—we flew there and then drove by car out to the Kurchatov city—and the Soviets were there to meet us. Georgi Zerkov who was my counterpart, was the head of medium machine building, they called it which, was their nuclear weapons program, and Il'enko and Nick and Palenykh. Nick handed all of us a sack. As we got out and were shaking hands and they **[00:20:00]** were going to show us to our rooms, Nick handed everybody, the three or four or five of us, a paper sack and it had in it toilet paper. He said, U.S. toilet paper is the most prized possession at this test site.

So he had a sack with a roll of toilet paper for each of us. And quickly you understand why that was important.

Comforts of home.

Yes.

Now Nick got an award from President George [H.W.] Bush and he wouldn't tell me too much about it. Do you know anything about that that you could tell me? It was for the test site. It was for the role that they had played in JVE.

Well, Nick got a personal commendation from President Bush. Nick and I are a lot alike. Nick said, I just was doing my job.

He said everybody else did the work. Yes. I could tell that that was kind of a modest comment. But it still is a tribute to the test site. I wondered if you had had any influence in having him nominated for that.

I may have had. I forget. I think both Nick and I—he may have said the same thing to you—as time has gone by we have begun to understand more and more the significance of the JVE and the first meeting and the, you know, verification and diplomatic relations are all based on confidence. If you don't have confidence, you never get to a treaty. And Nick and I both think that the level of confidence that was achieved in the technical community as a result of the JVEs was just a huge influence on things that happened later.

Yes, and Viktor Mikhailov, that's his feeling. That's the kinds of things he's expressed too, that the real things that came out of the JVE was the friendships of working together and the feeling that the United States could be a friend.

"Trust but verify." And we proved we could verify, and we also built up trust.

Yes. And you know, the thing that I think is also significant is that the mission of the test site, deterrence, was absolutely more important than pushing that button.

Yes. Just having it, and having the enemy know that you're holding them at risk. That's what it's all about. That's the name of the game.

Well, and even in the willingness of the test workers to work side by side. There was one story that I got in some of the documents, and it was over in Semipalatinsk, where he had this journal, one of the test site workers, and he said If one U.S. worker put down a tool, a Soviet worker was right there beside you, picking it up and working beside you, you know, that there was an eagerness to participating in this. There was a lot of suspicion and that was able to be overcome by this joint working together. It really is, and it's even a more powerful story when the Soviet Union fell, because it was so close to the end.

Yes.

Well, I'm done with my questions. If there's anything else you would like to add for the record? I've really appreciated your time and your thoughts. And I know your experience. It seemed like I read your speech about the comprehensive test ban and you had talked about—been involved in all of the nuclear treaties. I didn't know if that went clear back to 1974. I didn't know how far back that went.

Well, I've been involved in—let me say it a different way. My professional career has been governed by treaty, which sort of began when I came here in 1958 and all of a **[00:25:00]** sudden there's this proposed moratorium on nuclear testing. And so suddenly we're doing atmospheric testing at the Nevada Test Site in 1958, which hadn't been planned. That was a treaty. And then my life has been governed by them since: by the Limited Test Ban Treaty, by the Threshold Test Ban Treaty, by the Peaceful Nuclear Explosives Treaty. Over time, I was certainly involved in the development of the Threshold Test Ban Treaty and the PNET and in the things that happened after that here. And then when I got to Washington I got involved in the diplomatic level with the INF [Intermediate Range Nuclear Forces Treaty]—

Was it the SALT [Strategic Arms Limitation Talks II]?

SALT.

You were involved with SALT?

Yes. And of course with the JVE stuff, and fascinating, just fascinating.

You learned more about international relations than you ever wanted to know.

I made several trips to Moscow with Mr. Schultz on Air Force Two, and that was quite an experience. Quite an experience. And I watched with interest as, you know, when things were really, in a diplomatic sense, busy in late 1987 and early 1988, leading up to the May 1988 summit.

Now you were actively involved in Geneva then?

Yes, and and at some risk because my own people were saying, What the hell are you doing in Geneva? You ought to be here worrying about what's going on in the United States.

But my bosses wanted me there not because of me but because of the position I held.

Well, I noticed as they would discuss, the interagency councils here at the test site, as they would discuss various problems and how we're going to solve them, they would say, Check with Geneva. Check with Geneva. I assumed that was you.

Well no, not routinely. Not routinely. It was people like Paul Robinson routinely, and people from the test site, and principally people from the labs. But you know I watched—when I first started traveling to the Soviet Union, you know, you'd sit in a negotiating session and the Soviets would be there and we'd be here and there'd be a zillion ashtrays. And I smoked at the time, but I think I was the only one of the U.S. delegation that did. And they *all* did, and the room was just, you know, you could hardly breathe in the room. And then in between negotiating sessions there'd be vodka everywhere, and lots of vodka every night. And then, you know, the next time we go to Moscow there's no smoking in the negotiating rooms. You could walk out in the hallways and smoke in the Foreign Ministry. And the next time we go over there, you can't smoke in the building. And the vodka's gone. This was Gorbachev, you know, banning smoking in public buildings, banning liquor in public buildings. And it got to where the Soviets joked about it, wondering if we had official dinners if we were going to end up having to drink grape juice. Well, they did have vodka and wine at the official dinners, but the casual drinking which went on all the time, and the smoking, he banned.

I didn't know that. That's certainly not in his biography.

It was funny to watch.

Yes. Well, those negotiating groups, how many negotiators were there, you know, on the U.S. side and on the Soviet side?

Oh, there would be seven or eight on each side. And I was sitting in one, I think the last time we **[00:30:00]** went over there before the May summit, and the START negotiator was an air force general, Bob [Kirkwood]—he's now dead—on the National Security Council staff. And the Soviet negotiator was the equivalent of the deputy secretary of defense for them, something like that. So everything was done, it was all over, we were going back to the U.S., and then this would all be codified a month later when the principals got together. So the Soviet guy said to the general, to Bob Kirkwood, through an interpreter—now, you know, there's another interesting thing. A lot of them spoke fluent English and some of our people spoke Russian, but you *never* did that at the table. Soviets that you'd see in the evening that spoke fluent English would only speak Cyrillic during the day.

Anyway, that guy said through his interpreter to this guy, `Thank you very much, General. We've gotten a lot done. I've enjoyed our association. I hope you've enjoyed it and I hope we will see you again in Moscow.`

And they shook hands and the general made the usual statements about how much he'd enjoyed working with them and what we'd done for the world and then he said, `And I am quite sure there's a high probability I will make at least one more trip to Moscow.`

And the Soviet said, `When and where will that be?`

And this guy said, `In the cockpit of a B-52.`

And everybody on our side of the table, my heart stopped because, you know, what this guy had said is, `When I come over in the bomber, when we're going to drop nuclear weapons on you, that's probably the next time I'll—`

And then that guy started laughing because here was a military guy talking to a military guy and he understood what this fellow had said. We all knew the likelihood wasn't high but these were career military officers talking to one another and when this guy said, Next time I come over here, it'll probably be in the cockpit of a B-52, that guy just had hysterics.

As soon as he started laughing, then the rest of us all said, Phew! And then everybody else laughed.

You knew it was a joke. It's a joke. Did the Russians have a sense of humor then?

Yes, they did. Yes, they did.

That's good to know that.

Yes, they did.

That's good. Well, I was surprised at how large of a document the JVE was. It was over a hundred pages, like 103 pages, so there was a lot of negotiation and there was a lot of work on that.

You know, the night before the day that I described earlier when Schultz and Shevardnadze were going to sign the JVE agreement, with the two principals standing behind them, at two o'clock in the morning Ambassador Paul Robinson, a very senior U.S. official, Deputy Secretary of Energy Joe Salgado, Troy Wade, and a U.S. attorney are *frantically* in the U.S. Embassy helping make copies of the documents so that they would be ready the next morning for the principals to sign.

Oh. Two o'clock in the morning.

Yes. A pretty high-priced group to be in the copying machine but—

I have to ask you one more question. Did you get to interact that much with Ronald Reagan?

A little bit. A little bit. Did you see the thing in the paper the other day about me and Ronald Reagan?

No.

[00:35:00] Go look at last—I don't think I have it here. Last Tuesday's *Review-Journal.*

Because I was trying to read everything. OK.

Yes, there was quite an article showing me in the cabinet room with Ronald Reagan.

Oh, I'll have to get that out.

I had some direct contact with him. Not a lot, but one of them is shown in the photograph that's in that *Review-Journal* article, which was a briefing for the president on the status of the security of the nuclear stockpile around the world, an annual briefing. I did that three times. So yes, I did have some interaction with him. Not as much as I would've liked but—

Yes. Well, have you had any thoughts with this past week of his passing?

Oh, a lot. A lot.

Lot of memories probably.

Lot of memories.

A lot of information that came out about the Cold War that I thought was a long time coming.

And he, you know, one of the [pause] one of the things I was reminded of, we would go to do this meeting that I'm talking about. It is specified by law and it says that once a year, the Department of Defense and the Department of Energy will brief the president and the National Security Council on the security of the nuclear stockpile. And so picture the cabinet room and you'll see it in the picture in the paper, Reagan sitting there and in the photograph Howard Baker was his chief of staff and Frank Carlucci was the national security advisor. This is all done in a very formal way, and the chief of staff says, `Mr. President, this is a meeting of the National Security Council.`

And then the National Security Council advisor Carlucci says, Mr. President, we're here today to blah-blah-blah. Secretary of Defense Weinberger is the principal for the DoD and his briefer will be Bob Barker, and Secretary Harrington is here for the DOE and to present that briefing will be Troy Wade, and are you ready to get started, Mr. President?

And Reagan said, That reminds me of a story. You know, when I was working for General Electric, I toured the Hanford reservation and we went through all these nuclear facilities and all these buildings, and at the end of the day as we were leaving they had me stick my hands in the big machine that monitors radiation. The bells went off and it clicked and the needles went up and he said, 'Don't worry, Mr. Reagan, that's your radium dial wristwatch.' So we laughed and he said, You know, it wasn't until I was laying in bed that night that I thought, I wasn't wearing a wristwatch. And we all laughed.

And the next year, you know, same formality, Mr. President, this is—and these are the briefers.

I'm reminded of the time I went to Hanford.

You know, he'd tell the same story again, slightly different. We'd all laugh again. But that's the kind of a guy he was.

Oh, the stories that he told. That's neat.

Wasn't till I got in bed that night and I thought, I wasn't wearing a wristwatch.

He was good, wasn't he?

[00:38:41] End Track 2, Disk 2.

[End of interview]