Carlos Vélez Oral Histories BONUS Draft 1 20241008 — English

Office of Legacy Management
BONUS Oral History Project
Interview of Carlos Vélez
July 17, 2024
Interviewer: Scott Snider

Note: In this transcript, Carlos Vélez and the interpreter's Spanish has been translated to English.

SCOTT SNIDER: This is an oral history interview conducted on July 17, 2024, by the Department of Energy Office of Legacy Management. My name is Scott Snider, S-C-O-T-T S-N-I-D-E-R. I'll be conducting this interview today. And [to start with?], Carlos, could you please — uh — say your name and spell it for me in Spanish, please.

INTERPRETER: To start off with, Carlos, please, could you tell me your name and spell it, please?

CARLOS VÉLEZ: Of course. My name is Carlos Manuel Vélez Pereira. C-A-R-L-O-S M-A-N-U-E-L V-E-L-E-Z P-E-R-E-I-R-A.

SNIDER: (inaudible). (Laughter.)

VÉLEZ: Yes.

SNIDER: Oh, to start off with — uh — if you could just — uh — tell us about your early life — uh — and your background, [00:01:00] uh — prior to your involvement — uh — with the BONUS [site?].

INTERPRETER: Uh, to start off with, if you could please tell us about your life as — as you were growing up and your background prior to your involvement with BONUS.

VÉLEZ: Since I (inaudible)?

INTERPRETER: (inaudible)?

SNIDER: Oh, well, you don't have to go back that far. (Laughter.)

INTERPRETER: (inaudible).

VÉLEZ: So, I studied at the University of Puerto Rico — uh — my profession in chemistry. When I graduated — uh — I joined the Electric Power Authority. That was on Dec. 16, 1978, I started at the thermonuclear plant — uh — thermoelectric plant of Palo Seco. Uh — I was there for 11 years. While I was there, I started as a lab technician. Later, I switched to chemical supervisor. And I had a few miscellaneous tasks, such as providing training [00:02:00] at the Electric System

Training Center — uh — and taking computer courses. In ‘89, I switch to the Environmental Division. I start at Environmental Studies, doing projects of — evaluation of environmental projects. Later, I switched to the underground tank area in underground [mission?]. I handle hazardous substances. And then I switched to the Air Department. At the Air Department I did emission tests with the [Authority?] Emissions Lab. And then, from there — uh — evaluations arise — that department was in charge of alternating projects. Among the [inaudible], there was the BONUS nuclear plant, in Molino de Culebra, and the solar plant in Juana Díaz. In 1984, the mayor [at the time, Caro?], is interested in having the coast guard give him the lighthouse [00:03:00] to use it as a tourist site. And, at the same time, he tries to approach the Authority to set up a historical and technological museum at the BONUS nuclear plant. Which was decommissioned by then [already?]. The [decommission?] process started from ‘68. In ‘70, it is decommissioned already. And then Doctor [Mimi Lizarre?], in Mayagüez, conducts radiologic studies once a year — uh — informing the Energy Department about the results. And it’s not until then that Caro becomes interested in turning it into a museum, too. And then a comprehensive evaluation of the plant is performed and there are conversations with the Energy Department. It’s — the 135-string exclusion zone is reduced to just five strings. Which is where the — the museum is located at the moment. And the decommission takes place. Doctor [00:04:00] Olasagasti is hired to handle the museography. He decides to organize the museum by themes. He didn’t do it chronologically, telling the history bit by bit, but rather he picked a specific theme, and he organized the Authority Museum from theme to theme. Uh — that begins around 1986. Once the radiologic clean-up ends, well, obviously — uh — among the agreements that were made, the department (inaudible) was in charge of conducting the radiologic studies. I was the supervisor of the area where the radiologic studies were to be conducted. Therefore, they had to provide us with training as radiologic technologist I and II. And that’s the way it was done every two years. From that moment, first, with private — uh — contractors. And then they got Mr. [Chatuef?] as a radiologic consultant of the plant itself. And he would then hire people to provide us with training. [00:05:00] From that moment, the museum phase began. By around 2000 already, [Linda Gosto?] was working at the Authority Museum. And the Technologic Museum side of it is incorporated. Uh — then she would tell the historical story and I would take care of the technological side. And between she and I, we would make the different presentations. A presentation was made, which is all over the internet at the moment, about how the plant was built. And from there we would switch to the museum and we would explain the different museum stages. The museum ended up receiving visits from, obviously, high school, middle school students. Uh — one summer it was visited by 1,500 students. Obviously, I had a group of four people. [00:06:00] We had to position ourselves in different areas in the museum and attend to groups of up to 75 people, because the — the — the visits to the museum were guided, it’s not like the museum is open and people could walk around, but the area was controlled instead. Uh — in 2001, a closer approach is made to get the museum open and a few public meetings are held with the Department of Energy, here in Rincón. Obviously, Rincón’s Ecological Law was the most reluctant to get the museum open. And after several — uh — meetings with them, well, that day — uh — the president, well, she was able to enter the museum with her family for the first time. Because we were able to convince her that what was in there was the same as the radiation we have out here. I had the tools. People were shown — uh — [00:07:00] the way it was measured. And any

questions they might have, well, were answered right away. In 2005, the basement was still shut down because it was not ready and it had residual radiation. And even though it was minimal, in order to avoid exposure, in 2005, the basement floor was filled with several inches of concrete, all the existing removable radiation was encapsulated. And, the — as a matter of fact, as of now, the basement is ready to be set up as a museum. And it's the most important part of the plant because it's there that the [filling?] pumps, condensate pumps, spheres and all the — the tools the plant actually has are. The plant is unique in the sense that it's an all [inclusive?]. Meaning everything is encapsulated within the plant's dome. The plant is a dome which has the support units, pneumatic units, [00:08:00] electric sections, and every other section within. Outside, there's an area, which was the administrative [way?], where the plant's boss was. And in that area, well, there's a radiologic control room, too. What happens? If radiation went up because of any leak there was at the plant at that moment, the plant has some water sprinklers within. The sprinklers were [shot?] and the person who was here, at the radiologic room, would seal the plant. The plant was always kept at a negative atmospheric pressure. [Which means that?] the area — the air outside came in, but the air from the plant could not go out. And everything was under control. One of the things we would show people is that when it would go — uh— at that time, obviously the radiation meter was used. Today, there's no need to use it because there's no radiation to that degree. Uh — when you were leaving the plant, there was a machine where you would stop at, [00:09:00] put your hands in, and it would measure your radiation levels. If you were contaminated, you would just go to the washbasin that was there, wash your hands. It would check you again and then you would leave. The plant had a double-hatch system. Meaning that when you were going to enter, you would enter, this door would be sealed, and then this one would. Negative pressure was always kept within the plant. Uh — moving forward with the history, also in 2000, Puerto Rico's legislative body names the BONUS nuclear plant as Doctor Modesto Iriarte Technologic Museum in honor of the doctor who was responsible for it, that plant. He was among the first three people to graduate in a [dual?] doctorate in radiology — sorry, nuclear from the University of Michigan. Uh — Doctor Iriarte, is — was our Einstein. [00:10:00] It's he who promoted the photovoltaic plant projects in Juana Díaz, the one in Culebra, the wind turbine. [So, whatever?] Authority project there was, he is the person who, not just because he was a member of the board, but because he was its president for many — long time, the government board, he would give directions on how or how Authority should proceed and in what direction. There were several projects. The project considered at BONUS — uh — comes from the person who was Authority's Executive Director at the time, who is [Sol Luis Descartes?]. That's around the year '56, more or less, let's look back at the history, just to add a few things. Uh — [you know?], the president introduced the Atoms for Peace program. And that's when the use of nuclear energy for electricity begins. Then Sol Luis Descartes — uh — suggests that people should be sent and trained. [00:11:00] A radiologic training center was created, as I said, in Mayagüez and in Río Piedras. Doctor Iriarte is sent to Michigan, as well as several other people, to take courses in radiology. Even [mastery to a nuclear degree?] is provided in Mayagüez. Because Mayagüez had a nuclear reactor, too. Then the BONUS project began. And as a demonstration plant, it was a small model, it was of 17 megawatts. As I say, like a steam turbine from today, a gas turbine. Uh — the idea was to see whether using a boiling water reactor was feasible, what is called a BWR, attached to a heater, right? And then, that's where the initials

come from, Boiling Water Reactor. Uh — the BONUS plant — uh — a superheater is attached to it. Hence the name, BONUS Nuclear Superheater. [00:12:00] And then this was — that was part of the mast— of Doctor Iriarte's master's thesis. That's why Doctor Iriarte was so involved in the project. Uh — the demonstration model begins. But at the same time, Authority says, "(inaudible) This will be a demonstration, but we want to build more nuclear plants in Puerto Rico to see if we can leave the dependence on oil behind. And what's — then what is known as selection site takes place. A selection of different sites. And environmental assessments are conducted. That's what happened with Tortuguero. Obviously, it happened with Rincón and with different areas. In the South area, where [Aguirre Combined Cycle?] is right now, Aguirre Thermoelectric Power Plant. But what happens? As time goes by — uh — seisms start to happen and in the year '70 the environmental quality board is born, and also EPA is born. There are more restrictions. And then those eight sites are limited to one in the South [00:13:00] and another one here, in Tortuguero and in [Barilote?], where the turbines are right now. What happened? Uh, after several assessments, obviously, [because the studies were of vibroseismic nature?], the possibility of prospecting for oil comes up. But that's a different story. So — uh — after the vibroseismic studies it is decided — going to Barilote is considered a better option. When it goes to Barilote — uh — two plants were proposed, the [Souco?], which would be the one built in Aguirre, and the [Norco?], which was — was going to be the one built in the North area. When they go to Barilote, it is a political era. Romero is the governor. Rafael Hernández Colón is the candidate. Then Rafael suggests that there should not be a nuclear plant, and so that people vote for him. And then Romero comes and he issues an administrative order prohibiting the use [00:14:00] of nuclear energy to generate electricity. And that's where the projects ended. In addition, the Norco project required a number of insurance policies. And those insurance policies were of 240 million dollars. Obviously, for you to get an idea of — and I have to do this as an aside for you to get an idea of how the Electric Power Authority works. The Electric Power Authority is a condominium. The condominium has its board of directors. And an administrator is appointed. In the case of Authority's board of directors, it's the Government Board. In the case of the person who is in charge of the condominium's administration, it's the executive director. And, well, obviously, the executive director has their support departments, electricians, (inaudible), and everything the electric system entails. Every year, a yearly budget is made, just as it would be done in a condominium, and it is introduced to the people of the village. I think that happens in April. But what happens? The condominium needs painting. [00:15:00] That's what apportionments are for. But in the case of the Authority there are no such apportionments. There's what's called vouchers. And with the vouchers, one can proceed to make major improvements and it is paid little by little by means of the vouchers. Who pays for the vouchers? The [condominents?]. Who are the condominents? The people of Puerto Rico. That's why when they — ask me about the Authority, I say it is — the Electric Power Authority of the people from Puerto Rico. Because there has always been an approach of introducing it as a private entity, even though it is not. It's simply a [unit?] of the people. And that would lead me to other things that I don't want to discuss at the moment, such as privatizations. But the thing is you already got an idea of how the Authority works, why the vouchers are born, and why the 240 million depend on the availability of vouchers to defray all the investments that are being made. So, there, (inaudible) in the nuclear project. Uh — at a given time, [00:16:00] the Department of Energy — uh — wanted to do what is known as a

"nuplex," nuclear complex, in the Aguirre area. Aguirre has a particularity, that it was an agricultural area, but it had a company town. What is a company town? A company that consisted of the people who worked in the agricultural area, but it had its post office, it had a — uh — stores. It was a small village. At the same time, it also had the plant. Because they intended to build a nuclear plant in Aguirre, the one I told you about, which is Souco, together with a fossil plant, of either coal or oil, as a support unit. Obviously, it ended up being oil. Why oil? In Puerto Rico, in order to have — uh — a constant supply of energy, you need to have a provision that is efficient enough to keep that. [00:17:00] That's why they opted for oil. What is the problem with solar electricity, for instance? We had the solar plant in Juana Díaz. At its peak time, the solar plant in Juana Díaz — uh — would generate 90 kilowatts. That's from — from 11 to 1 in the afternoon. But as an average, in a year, it would generate 30 kilowatts. And a very substantial investment was being made. Of course, the efficiency of the panels then can't be compared to the current ones. And the decision was made to move away from that and it was moved to what is currently at the University of Turabo. Culebra's wind turbine was a time in which NASA — uh — stopped launching rockets into space and started dealing with alternating energy. They set up the wind turbine. But the (inaudible) of the wind turbine, the one controlling its speed, would break every time, so the project was discarded too. That ended up becoming one of those evangelist [Raschke?] churches. And likewise, through different styles, [00:18:00] for instance, the ocean thermal energy project. We competed against Hawaii for that first project of building a small 50-kilowatt plant using the — uh — ocean's thermal energy. I mean, if you go three miles down, three kilometers down into the ocean, there's a difference in temperature of about 25 degrees. And that difference is enough for you to create steam and propel a turbine. So, the OTEC project, PROTEC for Puerto Rico, was dropped because Hawaii is a state and, obviously, it inspired more (inaudible) from members of congress. So, it was up in the air. In the 2000s there were attempts to bring the PROTEC project back to life. There's been biofuel projects. There's been different projects. But what they submit is, to the Authority, "Look, I have this project. Give me money to do it." [00:19:00] Instead of saying, "Look, I did this project. I need investment to do a bigger amount and I can prove to you that I can generate electricity with what I've done." That's always the missing part. They always expect the Authority to solve the problem in — conducting research, as it would happen with, for instance, prospection for oil. An inshore oil plant is not the same as an offshore oil plant. They have to invest 240 million, as I previously explained to you. That depends on vouchers and investors. There were even attempts to bring electric power from — from Venezuela first, then Colombia through Dominican Republic and Puerto Rico. Using alternative energy. But that meant billions of dollars. Three billions, give or take. Therefore, the project is dropped. Uh — when I retired in 2009, the Authority — because the people had become [00:20:00] more conscious in terms of device efficiency — had a surplus. And it was even considering requesting the delivery of energy to Saint Thomas, because Bruno-Vega was interested in having an underwater cable, like there's one for Vieques and Culebra, but which got to Saint Thomas. And practically — uh — it's there that series of projects ended. As I told you, one summer, there were 1,500 students in the visits there. Also, 900 auditing students participated. Obviously, as I told you, the — everything is guided. The plant, in addition to having a coffee shop area outside and a training center attached, there was the plant with the administrative units. So, at the time, the training center, when the nuclear plant was at its peak, I'm talking the year '60, the criticism started by

'63, '64 [00:21:00] and it shuts down in '69. But during that time, there were many research studies, you can look them up on the internet — uh — where there were scientists from different countries. Obviously, it was the eighth nuclear plant that was built, I think — uh — by the United States, or in the world. I don't remember well. Therefore, there was great interest and there was a great deal of examination. Because people would say, "Well, but what if it explodes? What if this happens? What if it gets flooded?" "Look, this is 20 feet above the sea floor. I mean, if that gets flooded, then Rincón got flooded." I mean, there are things that because of environmental matters get to a point that is not founded on reality. And that's why when I would introduce — give the explanation to people, another group would come. Because there was interest. "Look, that's not right, send them in." And they kept coming in. We even got to have people from universities in the United States. [00:22:00] And this is just the first question, so I hope I answered part of the remaining ones. You tell me.

INTERPRETER: Um, he — and so regarding his background, his education — um — the many positions he worked — uh — in the — in (inaudible) —

SNIDER: Mm-hmm.

INTERPRETER: And then how he got involved with the (inaudible) plant —

SNIDER: Mm-hmm.

INTERPRETER: — and how he were in different positions, also in testing, making sure that it was safe, and how came the idea of building a plant also in Puerto Rico, as he was claiming there were other exploration about alternative energy in different sites in Puerto Rico, (inaudible) —

SNIDER: Okay.

INTERPRETER: — (inaudible), in the south. And Rincón was one of those sites, and they were exploring alternatives in energy —

SNIDER: Mm-hmm.

INTERPRETER: — and he also worked — uh — with — how the — [00:23:00] after [it was closed?], how [the mayor?] was interested in creating a museum for education, and how they received many students. In one summer, for example, they received — uh — 1,500 students, in — uh — guided tours, and also — uh — hundreds of Boy Scouts, educating them about — uh — the plant, and the use of the energy, how — um.... Then, it was a museum — uh — for education, and— um — he was explaining how — the importance that it was — uh — the eighth — uh — nuclear plant built in the United States, or in the world, and the first in Latin America, and how that was so important, and how he was involved — uh — in the construction, as well as in — later —

SNIDER: Awesome.

INTERPRETER: — in the museum.

SNIDER: Yeah.

INTERPRETER: That's, generally, (overlapping dialogue; inaudible) —

SNIDER: That's the general idea. (laughter)

INTERPRETER: It was a long... And at the end he was saying that, "I — I know it was just the first question, and you have [00:24:00] other questions."

SNIDER: Oh, no, no... Oh, yeah, you're — hey, as much as you can share, we want everything you can share.

INTERPRETER: I'm sorry— um — he also mentioned that there were some videos, right, that — and — or film, or some information that is already on the internet.

VÉLEZ: Yes, there are certain videos that, right now, the main video we used to show at the plant [was leaked?] to Rincón's Mayor Office. And from Rincón's Mayor Office — uh — it came out to the world, too. It even got digitalized tremendously, which was the building of the plant. The way the vessel was brought — uh — from San Juan's dock. How the plant was built, people operating and building the plant. Uh — that presentation, we had our reservations about it. As it happens with the Serrallés Museum in Ponce. Because not everybody has it. Now, everybody has it. Uh — but — uh — it is a good presentation, [00:25:00] in the sense that it shows all the complexity, the whole structure. Because people used to say, "That structure won't hold." That structure, when — uh — civil engineers came to evaluate it, they would say, "Wow." The [rebarring?], the way it did.... As a matter of fact, there was a wooden hut that was inside the plant that we had to bring down. We punched it, kicked it, hammered it. And it was because the timber, it was arranged in a way that the joints were really solid. And it was a — a concept that is not used often. But, therefore, it's a thing that somebody who studies woodwork or somebody who studies civil engineering and sees that construction and sees the plans says, "Wow, this is good."

INTERPRETER: He said there is a video that was created — uh — including footage of how they transported the materials [00:26:00] for the construction, and how the operators were working that. So — uh — they created it, and they — initially, they — uh — [saved it?] — uh — and kept it, and it was not available to the public, but now it is — uh — public, and people can see. And he was also explaining how they — uh, and at the end, they had to — uh — demolish — uh — the wooden, uh...

VÉLEZ: Shed?

INTERPRETER: I'm sorry?

VÉLEZ: Shed?

INTERPRETER: Yes, and it was so well-constructed that they couldn't destroy it. (Laughter.)

SNIDER: Tear it down? (Laughter.)

VÉLEZ: Oh, we destroyed (inaudible) [all the?] time.

SNIDER: This is kind of a two-part question — uh — but how many years did you work for PREPA? And the second part is over the years, could you describe the relationship between PREPA and the Department of Energy and how that relationship changed and grew over time?

VÉLEZ: Uh — [00:27:00] could you repeat it again? Uh — could you repeat it again, the first part?

SNIDER: Yeah, sure. Uh — just how many years did you work for PREPA?

VÉLEZ: Oh, yeah.

SNIDER: And then just during your time from your perspective (inaudible), you know, talk about the relationship —

VÉLEZ: Oh.

SNIDER: — with PREPA and DOE — uh — and how that evolved over time?

VÉLEZ: Yes. Uh — I worked at the Electric Power Authority for 30 years. Uh — I retired because, honestly, after 30 years, if you compare the wages, what you earn to the pension you will receive, you are better off at home. And, therefore, even though I was retired, I was always available for anything they might need from Rincón or from the other projects. I was in charge — my job as a field operations supervisor itself, which name changed eventually, was [to make sure that the?] (inaudible) meteorology of the Authority and the air quality network. We would measure — uh — sulfur, nitrogen, nitrogen oxide emissions — uh — in different areas. [00:28:00] To evaluate if the (inaudible) were affecting the communities and things like that. Uh — in addition to that, well, I had several side jobs. Sometimes, I would represent the Authority in governmental-level meetings about solid waste, for instance. I was part of different committees when [Rosana Longoria?] or [Daniel Pagán?] were. Currently, I'm still part of one of the committees, which is to — Puerto Rico Committee for Light Pollution Control. That committee began in 2005. I began to take part in the committee representing the Authority. And when I retired, they said to me, "You are not leaving, you are staying." And to this day, I'm still there. That committee gives advice to the Environmental Quality Board [in terms of?] light pollution. That committee triggered the creation of a law to control light pollution in Puerto Rico. One of the few countries that have one. [00:29:00] And, obviously, a set of rules to avoid that. First, it starts by protecting species, such as turtles in their nesting areas, but also in people's shared areas — right? — sometimes a neighbor installs a lamp which light reaches your room and doesn't let you sleep. So, that's light pollution. And there's a series of factors to evaluate. So, billboards, for instance, which are installed and they have a great output of light. Uh — that's why I said that my work was not limited to my work itself, but rather I was also involved in other things where I would represent the Authority. Because I was a bit familiar with

computers, I was one of the first people to take courses from [Radioshack?] at the time, on (inaudible). That — you may have not heard of that. But it was 10-inch records, [00:30:00] afterwards, five and a half inches. And the — in the — when they wanted to set up a computer area in the division, it was I who represented that area. As I was leaving a division meeting, I was taken to a directors meeting, among all the directors, and from that moment on, I started taking part in the Authority's corporate strategic plan. I mean, I had several positions while I worked for the Authority. Which led me to see — I was even part of yet another committee that was in charge of (inaudible) the generative plants. Meaning I was at all the hydroelectric plants. I was at all the thermonuclear — thermoelectric plants, too, plus the alternating projects. That means that I was part of every single stage at a given point, I visited all of the Authority. I even got to go inside caves because of situations where the Authority had rented a (inaudible) of land in Vega Alta. [00:31:00] It turns out a truck collapsed and when we called Natural Resources, because there was an opening, and what happened was the owner had filled the cave area in some places. And there's a cave law in Puerto Rico. And that incurs fines and it incurs a lot of things. And then we had to move the area where we would receive vehicles to the Palo Seco area, so — which is where they are received currently.

INTERPRETER: And he worked for over 30 years — uh — [preparing verifications?], and including — uh — in meteorology and (inaudible) —

SNIDER: Mm-hmm.

INTERPRETER: — and in many, many other projects, because he was always invited to participate in many other aspects, in addition to some of his — uh — official functions. So he was — has been part of many committees, and even though he's — uh — retired, he's still part of the committee that — uh — worked with — uh — (inaudible).

SNIDER: Okay.

VÉLEZ: Light pollution.

SNIDER: [00:32:00] All the years that you worked on the site with PREPA.

VÉLEZ: Ah, I forgot.

SNIDER: Oh, okay. (laughter)

VÉLEZ: Uh, there was a second part of your question: the Department of Energy.

SNIDER: Oh, yeah, uh — yeah, the relationship, yes.

VÉLEZ: Yes. Uh — what happens? When the projects of the Department of Energy start, the first contact we have is with Mildred Ferré. Mildred Ferré was working at the Oak Ridge Reservation. And she was the person who (inaudible) — who was the intermediary with the Department of Energy for us to turn the — the plant into a museum. Afterwards, there were independent contractors, such as [Jacobs?], such as (inaudible), such as Informatic

International, where — uh — for instance, they took the documents that were at the plant, plus what I had brought from site selection, coal plants and other things, and they were digi— uh, they were cleaned and put back into boxes. A full copy of those files was sent to [00:33:00] the Department of Energy and we kept the originals. In recent years, there was something else that bothered me personally, and it's the fact that all the documents at the plant were sent to the Department of Energy. And I said, "Well, if you take that there, what [museographic evidence do you have?" And that's?] because they are digitalizing it. But what happens? The problem with digitalizing is not that photocopies are made, but the way it was digitalized. They would take the [logbooks?], open them to then scan their pages. Uh — I was involved in that project with the — with an independent contractor from the Department of Energy. It's like taking the Gutenberg Bible and opening it sideways and scanning it. And how do you intend to glue it back? It is no longer the Gutenberg Bible. And there's still a lot of them left that need documenting, scanning. But what bothers me is that when the BONUS files were sent, [00:34:00] the Authority files were sent, too, such as the coal plants studies that I mentioned earlier, nuclear plants handbooks, that currently don't exist in the world and that I had put away and kept there, that they didn't even know what to do with that. But now, since you guys (inaudible), if you ever get to see the boxes again and finish digitalizing them, please, do not break the files. Send them back. The idea is to keep that documentation. Because in 2007, I think it was Linda, she introduced to the National Historic Society the — using — uh — turning the plan— the museum into a historic site. And it was turned into a historic site. What happens? Supposedly, 60 years later, [00:35:00] you qualify for another position that is more important than the Historic Museum, which is — oh, I can't remember the name at the moment. Well, I can't remember the name right now. Landmark. Which means that the plant could qualify for landmark now, but in order to do that it needs the whole documentation to support what's being done. And I'm worried it might be destroyed and it is kept just because it is digitalized. I would prefer it if all the documentation, including [my?] files, was sent here, as it was intended, a documentation area, part of those files were transferred (inaudible), just as we sent copies to the Department of Energy, as a copy was sent to Rincón's library, which has its copy, and to the Legislative Assembly, that asked us for a copy, too. So, those three people, three entities, have a copy of those documents. [00:36:00] So, the Department of Energy, Mildred stayed with us and she's still — I think she's still at Oak Ridge, and until the moment she moved to Legacy Management, she was the intermediary with us. When she moved to Legacy Management, at that point other supervisors came, some of them have changed already, to be part of the group that will then give direction to the museographic part. Uh — one of the most important personalities we had there, that you told me there was a different one afterwards, was the Commissioner of the Nuclear Regulatory Commission — uh — (inaudible) [if I'm not remembering wrongly?], who came and visited us and saw the plant. He was delighted and we even gave him a copy of the presentation. Uh — at that point, the presentation was given in Spanish. So, I had to take it and translate it and be by his side translating the presentation to him. [00:37:00] Uh, but he ended up delighted with the plant. And the plant, when it opens as a museum itself, that it stays open all the time, it will become a worldwide attraction. Because, as I told you, it's one of the few existing plants. It's — another thing I didn't tell you. When the BONUS plant was built, it had a twin sister named Pathfinder. Pathfinder, at a given point, afterwards, it became a coal plant and later on it was demolished.

So, Pathfinder no longer exists. The only proper nuclear plant there's left to this day is Rincón's. With all the equipment and all the support units.

INTERPRETER: He was — uh — explaining that he was involved at the Department of Energy —

SNIDER: Mm-hmm.

INTERPRETER: — and also regarding documentation, and since — uh — you requested the documentation, to scan it, and they sent (inaudible) notes to the Department of Energy, and he's very concerned that — uh — after scanning it — uh — [00:38:00] they don't get destroyed, that he would like for them to be returned so they can keep it here — uh — for research purposes, because right now it is an historic site, but it would be eligible to be deemed as a —

VÉLEZ: Landmark.

INTERPRETER: — landmark, historic landmark, but in that case they would need the documentation that. So he's very concerned that the documentation don't get destroyed after — uh — the scanning process in the Department of Energy, and they do have some copies — uh — here — uh — in the office —

VÉLEZ: Uh, library —

INTERPRETER: — (overlapping dialogue; inaudible) —

VÉLEZ: — of Rincón, and also at the Municipal Assembly.

INTERPRETER: And he's very concerned, and he doesn't want to — for the (inaudible) documentation to be destroyed after the scanning process, and he would like for it to come back to Puerto Rico.

VÉLEZ: And also, because they have documentation from nuclear plants that today they don't — do not exist. Those — uh — those manuals and handbooks are unique. They're — [museologically?], they're very, very important.

INTERPRETER: [00:39:00] And he was also explaining that there was a, uh — another — like, a sister plan to Pathfinder, and was — uh — like a twin sister plan (overlapping dialogue; inaudible) —

SNIDER: (inaudible). I was [gleaning?] some of that. (Laughter.)

VÉLEZ: Yeah, yeah.

SNIDER: I didn't catch everything.

INTERPRETER: Uh, it doesn't exist anymore, but it was part of the project initially.

VÉLEZ: Yeah. Pathfinder is — was a dream for BONUS, and later on it was converted into a carbon fossil — uh — plant, and then it was destroyed. It was — right now, it doesn't exist. So all you have is BONUS as a complete nuclear plant, with all the systems that you can see it — uh — inclusive — uh — the control room, the lights on the control room, you can turn the switch on the back and you can see the lights and imagine that the (inaudible) is — uh — working.

SNIDER: Yeah. [00:40:00] Over 30 years working for PREPA —

VÉLEZ: Mm-hmm.

SNIDER: — so, you've seen a lot.

VÉLEZ: I've seen a lot.

SNIDER: Um, could you tell us — uh — about the impact of the BONUS site facility on the local community from your perspective?

INTERPRETER: Could you tell us about the impact on the local community, from your perspective (inaudible)?

VÉLEZ: Yes. Uh — a lot of the problems with the BONUS plant that arose when it started being built — firstly, remember a lot of people still had Nagasaki and Hiroshima on mind. The first use of nuclear energy, they blow half the world up. So, on people's minds it's a no-no. Secondly, what did they use in sci-fi movies? [Tyvek suits?] with radiation meters, which were the ones that looked like guns, and which, as a matter of fact, some of them remain there in the plant. And, therefore, that makes an impression on people that radiation is kind of bad. [00:41:00] And yet, everybody gets chest X-rays, they receive 50,000 roentgens and there's no problem. A person who smokes receives an amount of radiation, too. Because, that is — the plants that usually absorb radioactive material, a little bit. And radiation is all over the planet. I mean, radiation, as an electromagnetic wave, the whole universe is composed of electromagnetic waves. I can tell you a short story as a chemist (inaudible) the photon. If a photon changes its wavelength or it charges — changes the way it vibrates, it becomes visible light, X-rays, ultraviolet rays, the — in the same entity, not a particle, because it has no mass, well, it becomes different things that we see as normal on an everyday basis. That's what happens with [00:42:00] nuclear energy and radiation. What happens with radiation? As I would explain to people, you have a radiation problem depending on the amount of radiation of your source, on how long you are exposed to that radiation, on the amount of [shielding?] you receive. And that happens in villages such as Rincón or other villages in Puerto Rico, which are alongshore. And what happens? If people receive a big amount of sun radiation and they don't use blockers, then they receive a certain amount of radiation that makes their skin peel. Right? Everybody likes to peel off the pieces of skin. But if [you are exposed?] to that on a daily basis, it becomes chronic, it may become skin cancer. And it's all because of the exposure, the exposure time. The same happens with radiation at plants. (inaudible) I would use a dosimeter while I was — uh — working in areas with high levels of radiation. And that's why I could say, [00:43:00] that dosimeter was sent to measure and it was checked and they were able to say whether I had

been exposed to radiation or I had not been exposed to radiation. If there was a given amount of exposure, then it had to be moved away, left alone for a while. Just as it happens with people who has been exposed to the sun for long and they peel off. So, they have to stay at home for a while before they come back and while they recover. Because the body has the ability to heal itself. Uh — what else could I tell you? I digressed again, what was the question?

INTERPRETER: Yes, it was, what was the impact of BONUS on the community?

VÉLEZ: Oh, the impact, yes. The community even asked for an epidemiologic study then. An epidemiologic study is a study where the whole area is assessed and the impact of radiation on different people. So, in '75, a study was conducted by the Department from [00:44:00] here, from Puerto Rico, Health, the Health Department, where the different villages where assessed and compared to Rincón. And, as I told you, even coastal villages where the population that is [fed?] is normally older people who want to retire, who expose themselves to the sun a lot, well, the amount of cancer cases was more or less [in all the?]. So, there was no proof that the plant affected — uh — the village in any way. Even so, because gossip — you know? — gossip always come and go, there was a piece of gossip that obviously what was there was nuclear — uh — people from different planets would come there, and 20,000 things. So, because submarines go past here and arrive at the base down there, everybody would see that and they would see it as something — first of all, no a— it wasn't— it was an area where access was not allowed. [00:45:00] So, it's an "Area 51," if you think about it. Uh — as a matter of fact, the first people we trained — because at a given point, the municipality wanted to participate by giving the guides, the — the — the guided part within the museum, so we trained three people from the municipality. As a matter of fact, one of them, when she came in, started crying because she's lived in Rincón since she was very young and to her, that was a great mystery. When she came in, well, she's at a much better place than Disney World. And she was very shocked, very shocked indeed. But she realized it was a normal thing. I mean, a plant like any other. It's just that it had [its situations?], in the sense that it used nuclear power instead of fossil energy (inaudible) other kind of energy, such as hydroelectric. That would be more or less the Authority's point of view. [00:46:00] There were certain journalists that even in the newspaper, when Doctor Iriarte dies, they write, "The author of the Museum of Death dies." Because they are so environmentalist that they go too far int the sense that they are not very objective about certain things. They are when it comes to what they want to tell the village dwellers. Which is that everything that's nuclear is useless, even though that's not true.

INTERPRETER: You know, there have already been some concerns in the community regarding the radiation and the dangers, but —

SNIDER: Mm-hmm.

INTERPRETER: — it's just an issue of educating people, and explaining to them that —

SNIDER: Right.

INTERPRETER: — radiation is everywhere, and —

SNIDER: Yeah.

INTERPRETER: — uh, you just — we just need to take care of ourselves, and (inaudible) take care of ourselves — uh — in addition of (inaudible). And also — um — in — uh — local newspapers and news, there's always been some [00:47:00] sensationalist — uh — journalists —

SNIDER: Ah.

INTERPRETER: — and, um —

SNIDER: Mm-hmm.

INTERPRETER: — that has been an issue, as well.

VÉLEZ: Uh — do you want me to tell you in English or Spanish?

INTERPRETER: Do you prefer it in Spanish or English?

VÉLEZ: Uh, it's a small thing. Uh — usually when I gave a tour, after doing the tour — uh — we enter to one — uh — room that has — uh — laboratory equipment. And I showed them the different types of — uh — Geiger counters. There are — and there are ones that look like a pistol, obviously, and one of the reasons that they used [it in sci-fi?], it was because of that.

SNIDER: Uh-huh.

VÉLEZ: And so I tell them, "Go around, see everything in the lab." Then I go to another room and take the Geiger counter.

SNIDER: Yeah.

VÉLEZ: And when they are coming out, I said, "You know why you haven't heard of any other groups that visit the plant?" And then I go like this, and everyone jumps up. (Laughter.) And I said, [00:48:00] "I have explained to you that this is just for measurement."

SNIDER: Yeah.

VÉLEZ: "It doesn't shoot anything."

SNIDER: Yeah, yeah.

VÉLEZ: But in your mind, your mindset, you will — if I show you my hand like this —

SNIDER: Yeah.

VÉLEZ: — [you are concerned?].

SNIDER: Yeah. Yeah.

VÉLEZ: So, that — that's why I'm saying that. Uh — really — uh — we have to take out from the people in order that they perceive. Other thing is we show them — we have some bars of lead. We have some bars of lead —

SNIDER: Mm-hmm.

VÉLEZ: — that were in the computers room. So, I take one of those bars and tell someone, "Can you hold it for me, please? But be careful. It weighs a lot.

SNIDER: They're heavy, yeah.

VÉLEZ: And they say, "Come on." And they go like this. (Laughter.) And then they say, "Really?" So, now imagine in your mind when you see all those movies that they have gold bars, they take them out like this, how much [00:49:00] that one weighs, and how much that almost — the same weight that the —

SNIDER: Yeah.

VÉLEZ: — that the one you see over there. So, be concerned of what you're watching. Things like that.

SNIDER: And you were there for so long and you talked about educating people. Uh — could you describe — uh — anything — uh — related to the [clean-up?] of the site?

VÉLEZ: Sure.

INTERPRETER: Since you've been there for so long and you already talked about people's education, could you tell us about the clean-up of the site?

VÉLEZ: Yes, of course. As I told you, when the clean-up started around the year '86, people would use the plan— in the plant, basically the electric system of — the transmission system, like (inaudible) a bunch of meters in one of the rooms and things like that. The documentation was in files and there were lots of fungus. So, it was necessary to do a full clean-up. [00:50:00] In addition to physically cleaning, sweeping, cleaning, getting the areas where the museography was to be set up ready. So, it was necessary to get photographs from those years, which nobody knows where they are today, the ones at the exhibitions, and enlarge them, obviously, in order to introduce the different exhibitions. Downstairs, at the administrative area, the Historic Museum was built. In there, there was the history of the Taino Indigenous people, up to the birth of the village of Rincón, include — including folk imagery. Saint imagery and things like that. So, then, when you go inside the plant, you can see how the plant was built, the people who were involved in the history of the radiation. Uh — there was a miniature that explained what the reactor was like and what the control bars were like. Once, there was project consisting in putting the control bars to work mechanically so that people could see how they did the [shielding?] and how they were used [00:51:00] to [shield?] and produce the

nuclear reaction. And it was like that with each of the — of the rooms, which used to be for pneumatic, electric extraction, and [whatnot?]. So, it was turned into a museographic area. A room was turned into computer and is still has the Macintosh in there, from the year (inaudible), to create a laboratory for the people. For them to then sit and see and look up information. So, it got that far, at a standstill, too. Uh — the plant's top floor is what was used as a museum. And at that moment, the area that was to — which was near the concrete monolith was [shielded?], because it had residual radiation by the time and high — well, not high levels, questionable levels of nuclear energy, of nuclear radiation. [00:52:00] But you could — [you didn't need (inaudible) or anything?]. You would measure it and with that you would be safe in that regard. Uh — from there, then — uh — as I told you, there were attempts to move the museum part to the basement part. But for that, the radiation needed to be encapsulated again and all the areas needed shielding. And that was done, too. Currently, both the top floor and bottom floor — uh — can be set up. Supposedly, in 120 years, the levels of what's inside the concrete monolith will have gone down enough to not be any exposure. Actually, the way it is right now, in my personal opinion — uh — because it is encap— in the concrete monolith, the Department of Energy wouldn't need to be involved. Because there's not a level of radiation that could be considered high — if you compare it to the pharmaceuticals [00:53:00] there are in Puerto Rico, which have more radioactive areas than we have. So, that would be part of what I hope to have answered with your question.

INTERPRETER: Now we're comparing in the different levels, and you understand that right now, (inaudible) right now, since it is encapsulated, that — uh — one of the — uh, I think — he thinks (inaudible), and right now that — uh — he even thinks that the Department of Energy wouldn't get involved at the level that it needs right now. And there are other sites in Puerto Rico, (inaudible) companies, that have more [authorization?] at the level that —

SNIDER: Mm.

INTERPRETER: — is there right now. So he thinks that [it is safe?] with the work that they have been doing to [prepare?] (inaudible).

VÉLEZ: Well, most — mostly, (inaudible) the uses for it is sterilization process, (inaudible).

SNIDER: Yeah.

SNIDER: Uh — one more question — uh — and just a more general one. [00:54:00] I just — uh — is there any particular event or any particular memory that sticks out that you'd like to share?

VÉLEZ: Well, properly speaking, events, obviously, when the museum was being built, we were not involved. Uh — the radiologic training — uh — was very interesting. Uh — the visits we had from the — from students, auditing students, and people from different universities, from the commissioner, obviously. You know? We realized that we had a project that Linda and I kept zealously. To a point that even if an executive director wanted to go in there, they had to call us. Because we already instructed the guard that whoever intended to go in there had to

contact us, because it was a controlled area. So, in that sense, while we were there, we did everything in our power to give the museum the importance it deserves. [00:55:00] What's more, when I joined different stages in the [society of chemistry?], I worked at the journal at one of those stages. I did a review of the history of the museum, too. How it was turned from a plant into a museum. And currently — uh — from time to time, a few people on the internet come up, some of them with — uh — doubts really w— that are of — uh — significance. There was one that was called [California to Puerto Rico?]. They were a few (inaudible) who saw the plant and wanted to know more or less what was that — what was the story behind it. So, I joined the comments, told them who I was, the things that were done, the way they were done. And then other groups started to join the que— the comments sections — uh — and they would ask, for instance, the seismology. And I would explain to them that the seismology, well, had — there was a seismologic network. [00:56:00] When that seismologic network comes to an end — uh — the nuclear plants, the development of nuclear plants, as I told you, turns into the Seismologic Network of Puerto Rico. It's the current one — uh — that Puerto Rico has. And we would give it support with the helicopters from the Authority, taking them to Mona and Vieques to — I mean, to Mona and (inaudible) to check the tools they had in those areas. We would usually do that twice a year. Later on, that was (inaudible)— it was [held?]. Uh — it was a very interesting experience. Obviously, a lot of groups disagreed. And it was necessary to try to reach a consensus. Sometimes, I would get in the middle — I don't like people talking without evidence. When I argued in that comments group, I would say to them, "Look for this handbook, which is in the libr— in Rincón. It tells the hi— the seismography. [00:57:00] And if you want to know whether meetings were held before the plant was built, well, [yes?], there's evidence that in this — in those [hazard manuals?] it says they met in San Juan, that there were public hearings." I mean, (inaudible) that the plant was born. That's like everything, a project. I mean, there were a lot of things that had to be deal with, a lot of things that were very interesting. As I said, especially during the hearings and with the kids, by their asking questions or holding the block of lead and seeing everything there was. Uh — and it's a thing that you still bring people, especially people who were born in Rincón, who have no idea what's in there, and when they go, they are shocked by everything there is.

INTERPRETER: Uh — especially for him, it was important — uh — construction process of the museum, turning it from a plant to a museum —

SNIDER: Mm-hmm.

INTERPRETER: — [00:58:00] it was really important for him, and also the trainings in the museum regarding radiation, and — uh — the many visitors that they have received from school, students, and other — students from other universities (inaudible) Puerto Rico — uh — Boy Scouts, and many people that have — uh — been through the museum in guided tours, and that has been really important — uh — for him. And he has been also participating in some discussions (inaudible) people are —

SNIDER: Oh.

INTERPRETER: — wondering about —

VÉLEZ: Mm-hmm.

INTERPRETER: — uh, what is going on, what is that, and he had —

SNIDER: Mm-hmm.

INTERPRETER: — uh —

VÉLEZ: Mm.

INTERPRETER: — [entered calmly?] and explained to him that — uh —

SNIDER: Right.

INTERPRETER: — to educate people — uh — because he doesn't like that sometimes people is talking without any evidence, and he likes —

SNIDER: Right, right.

INTERPRETER: — to support —

VÉLEZ: Decide, yeah.

INTERPRETER: — the discussion with background information, evidence, documentation.

SNIDER: Mm-hmm.

INTERPRETER: And — um — uh — he was also explaining that it's — uh — important for him, seeing people coming to visit in the museum, [00:59:00] especially people from Rincón, who have — uh — been born and raised here — uh — but they don't know much about the nuclear plant, and when they are able to come in, into the museum, and see it for themselves, they get overwhelmed or emotional —

SNIDER: Yeah.

INTERPRETER: — excited, because they didn't know what is happening, and so that — uh — education component is really important for him.

SNIDER: It's been a pleasure.

VÉLEZ: Thank you, my pleasure.

SNIDER: Thank you so much for coming down and doing this with us today.

VÉLEZ: Of course. Always at your disposal.

SNIDER: All right. That will be a wrap.

END OF AUDIO FILE