

ORAL HISTORY OF JOE LENHARD

Interviewed by Keith McDaniel

August 11, 2011

MR. MCDANIEL: *This is Keith McDaniel and today is August the 11th, 2011. And I am speaking with Joe Lenhard here at his home in Oak Ridge. Thanks for being with us Joe.*

MR. LENHARD: I'm happy to have you here.

MR. MCDANIEL: *Let's start out, tell me where you were born and raised, something about your family.*

MR. LENHARD: Okay, I was born and raised in Detroit, Michigan and was a very poor, poor family, poor kid. When I graduated from high school in 1947, I worked in an automobile factory as a laborer for about a year. And I decided that really wasn't for me. And I enlisted then in early '48 in the United States Navy. My brothers had both been in the Navy. And I was an enlisted man there in the Navy for about a year, but very early in that enlistment I took the test for Officer Training School and by golly I passed that test with one of the highest ratings in the country and the Navy gave me a four year scholarship, fully paid to Vanderbilt University.

MR. MCDANIEL: *Is that right?*

MR. LENHARD: Down here, down here in Tennessee. And I was very delighted to do that and during the four years at Vanderbilt, I was in physics and mathematics and I learned about an AEC Fellowship that was taking, and Health Physics that was being done there at Vanderbilt. So in 19 -, I went to Vanderbilt in '49 and graduated in '53 and became a commissioned officer of the Navy. And I won't tell you about the three years as a Commissioned Officer, but in 1956, I finished. And just before I finished I called Vanderbilt again and asked them to look into if I could have one of those Fellowships, those AEC Fellowships from Oak Ridge. And they got it set up so that sure enough

when I, when I retired, when I got out of the Navy Officer training course, I went to Vanderbilt for a one year, Health Physics Master's Degree Program, sponsored by ORAU, ORINS here in Oak Ridge. And I, I was very delighted with that. I will tell you the Health Physics part of the training course was done by ORNL. ORNL Health Physicists came over and taught that part of the course and I'll tell you about that later. But when, in 19- June 1957 then I came to Oak Ridge to spend the summer as hands on learn to be health physicist. And during that summer I fell in love with Oak Ridge. And even though I had another job kind of set up, I wiped it away. And I went and talked with the AEC, Atomic Energy Commission Oak Ridge Operations office, and they accepted me as an employee, a health physicist and their staff. And I was their first health physicist that was highly educated in health physics like that; most of the Health Physicists at that time kind of learned it by trade.

MR. MCDANIEL: *Sure.*

MR. LENHARD: And so I was, I was very delighted with that and here to stay.

MR. MCDANIEL: *So where were you, where was your job. You got the job, so who was it with?*

MR. LENHARD: With the Atomic Energy Commission in the building, it was a building near where the current AEC building was, behind it really. And that was the AEC headquarters for the entire, and it's also where in Manhattan Engineering District was.

MR. MCDANIEL: *Right.*

MR. LENHARD: When they did the operations.

MR. MCDANIEL: *Sure.*

MR. LENHARD: So one more aspect of being at Vanderbilt, I told you the, the health physics part of it was done by ORNL employees, and my teacher at that time from ORNL was named Elda Anderson.

MR. MCDANIEL: *Is that right?*

MR. LENHARD: And Elda, Elda was a very, very qualified person. She really, she really kind of took care of me even when I came back to Oak Ridge, I mean when I came to Oak Ridge and was working with AEC, she was still kind of looked after me, sort of thing. And in 1960, she was the Chairman of the United States Health Physics Society.

MR. MCDANIEL: *Is that right?*

MR. LENHARD: Which was two or three years old at that time. And they had a year or so earlier, picked about, I don't know seventy five people across the United States, who were highly qualified health physicists and named them a certified health physicist. And in 1960, Elda, I told you she was the Chairman of the Society and she decided that she wanted to form a system where new people could be tested and certified as health physicists. So she set that up for the summer of 1960. And she grabbed me and said, "Joe, I'd like you to go take that test." And I said, "Well Doctor Anderson, the specifications say you've got to have five years working experience and I've only got about two years working experience." She said, "Never mind about that, I want you to go take my test."

MR. MCDANIEL: *There you go.*

MR. LENHARD: So sure enough I did that, and in 1960, I was one of the first five people in the United States certified by examination to be a Certified Health Physicist.

That was an interesting part of my career. I really liked Elda and she, you've probably heard of her before. She's got a lot of, a lot of things named for her.

MR. MCDANIEL: *You know I guess was kind of an interesting thing, physics was kind of a young science, it was a young, so you were at the very beginning of that.*

MR. LENHARD: Close to the beginning, there were people who went through the this Vanderbilt training course maybe three years before --

MR. MCDANIEL: *Sure.*

MR. LENHARD: -- I came back. About the time - they weren't there when I was there in '53.

MR. MCDANIEL: *Right. Right. Exactly.*

MR. LENHARD: So anyway. Let me move on to the Y-12 criticality accident.

MR. MCDANIEL: *Okay.*

MR. LENHARD: On June 16th, 1958, I'd been here about a year. And we had a criticality accident. There had previous to this been two criticality accidents in the United States. There were both at Los Alamos. They were both people working with hunks of highly enriched uranium, which in one way or another accidentally came together while they were working with it. Those happened about two or three years apart at Los Alamo and both of those men were killed, they were dead. Our accident in '58 was the third one in the history of mankind and it was a completely different kind of accident. Y-12 was required each year to go through and do a study of everything and make sure that they still had all of the enriched uranium that had been given to them. So that was required for them to do every year. And they were in a part of 92 where they were washing out lines across the top of the particular room to collect the little bit of highly

enriched uranium that comes down in a drum here. And then they'd analyze that one piece of their highly enriched uranium and while they were doing that suddenly that drum when it got about that full went flash with a blue glow, which is what happens when there is a criticality. And the people immediately knew something had happened and they ran, which was smart.

MR. MCDANIEL: *Sure.*

MR. LENHARD: And then what happened in the bucket when it blows up like this, it goes non-critical and then settles back down and goes critical again. And while they don't know the exact amount of time, they estimated it probably did that twenty minutes.

MR. MCDANIEL: *Right.*

MR. LENHARD: And then it kind of settled down.

MR. MCDANIEL: *Before you continue, for some people who don't really understand what "critical" means, could you explain that to us?*

MR. LENHARD: Yes. When a, when a nuclear bomb goes off, two pieces of uranium come together like this and there are explosives around it to hold them together. And when they hold them together, suddenly the enriched uranium starts fissioning and that releases an incredible amount of energy. An unbelievable amount of energy and that's the atomic bomb.

MR. MCDANIEL: *Right.*

MR. LENHARD: That makes the atomic bomb. The fissioning of that highly enriched uranium.

MR. MCDANIEL: *And when you get a certain amount of that highly enriched uranium together, that's what causes it to go critical right?*

MR. LENHARD: That's right.

MR. MCDANIEL: *Too much of it in one place.*

MR. LENHARD: Too much of it in one place or if you have some here and you suddenly bring something up, the neutrons are escaping. You know some of the neutrons are escaping. If you bring something up that reflects the electrons back in there it can go critical again.

MR. MCDANIEL: *Right. Right.*

MR. LENHARD: Without any change you know?

MR. MCDANIEL: *Right. Right. Right.*

MR. LENHARD: It's just the. Okay the neutrons getting away.

MR. MCDANIEL: *Sure.*

MR. LENHARD: And I was called to go over there and the afternoon of the 16th and first I went in as a health physicist and monitored around to see if there were problems other than in that particular room where the criticality occurred. And then after that happened I went in a separate meeting room where the management, the Union Carbide Corporation Management was meeting there. And I was the only AEC person in the room.

MR. MCDANIEL: *Right.*

MR. LENHARD: And they were concerned at that time about what should we do now about that damn barrel in there.

MR. MCDANIEL: *Right.*

MR. LENHARD: If we walk in to try to do something, it could flash and we've got another person exposed.

MR. MCDANIEL: *Right.*

MR. LENHARD: So what eventually was decided, there was a -- George Jasney was a young engineer who was there. And a guy by the name of Bob Sharpie, you've probably never heard of Bob Sharpie. He was an ORNL nuclear scientist who was responsible for the -- the building of the -- Experimental Gas Cooled Reactor.

MR. MCDANIEL: *Okay.*

MR. LENHARD: A building out near ORNL. Do you know what I'm talking about?

MR. MCDANIEL: *Right. Yes.*

MR. LENHARD: That Gas Cooled Reactor --

MR. MCDANIEL: *Yes.*

MR. LENHARD: And he, Y-12 had brought him over since he was a nuclear physicist and understood criticality.

MR. MCDANIEL: *Right.*

MR. LENHARD: And when they finally got to an idea of what they would do, he went over to ORNL and got a control. A control rod is something that goes down in a reactor. In a reactor you have set of highly enriched -- or enriched uranium, not highly enriched -
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MR. MCDANIEL: *Right.*

MR. LENHARD: And then -- and middle, around through that set of thing, there are rods that absorb the neutrons.

MR. MCDANIEL: *Oh, I see.*

MR. LENHARD: And kind of kill it.

MR. MCDANIEL: *Right.*

MR. LENHARD: That's a control rod.

MR. MCDANIEL: *Okay.*

MR. LENHARD: And when you pull the control rods up like this and pull them out it suddenly gets to the point where it will work.

MR. MCDANIEL: *Sure. Exactly.*

MR. LENHARD: And the reactor goes critical. So Bob Sharpie went over to ORNL and he brought back a control rod and they got George Jasney in kind of a wheel thing that he could go into that room with, with a big metal shield in the front. And he is holding a control rod in front of that. So edges his way in toward that drum.

MR. MCDANIEL: *Right.*

MR. LENHARD: I remember him taking off his badge. He was trying to preserve, if there was an accident --

MR. MCDANIEL: *Sure.*

MR. LENHARD: -- he didn't want it recorded.

MR. MCDANIEL: *Right. Exactly.*

MR. LENHARD: And he went in and put the control rod down in the fifty-five gallon drum, so everybody is comfortable then. It's not going back but that was a -- that was a very important time at Y-12 and that's how they finally put it to bed then --

MR. MCDANIEL: *How long did it take? What kind of -- from the time it went critical till that happened, about how long was that? Few hours?*

MR. LENHARD: Oh longer than that.

MR. MCDANIEL: *Oh was it?*

MR. LENHARD: Oh yeah. Probably ten hours. Eight hours.

MR. MCDANIEL: *They had to figure out what they wanted to do --*

MR. LENHARD: They had to figure out what to do. They had to get this stuff --

MR. MCDANIEL: *Sure.*

MR. LENHARD: -- Make that. So yeah it took a long time. Now the accident --

MR. MCDANIEL: *Sure.*

MR. LENHARD: -- There were about eight people in that room near that drum when it went off --

MR. MCDANIEL: *Sure.*

MR. LENHARD: Maybe twenty feet away some of them.

MR. MCDANIEL: *Sure.*

MR. LENHARD: Five of them got radiation exposures between 200 and 400 rem. For your information, 500 rem, you get 500 rem and you've got a 50/50 chance of living.

MR. MCDANIEL: *Right. Right.*

MR. LENHARD: 200 to 400 you probably need some treatment and care and so on.

And the other three employees were below sixty, I think, rem. They were farther away. I remember one of those, I don't know the names of any of these people. When we did the reports and everything the personal names don't go in there.

MR. MCDANIEL: *Sure.*

MR. LENHARD: But anyway. But one of them we called "Blue Glow" because he couldn't stop talking about that Blue Glow. Blue Glow. He was talking about that Blue Glow all of the time.

MR. MCDANIEL: *Well he was one of just a handful of people who'd every really seen it.*

MR. LENHARD: Yeah he was. You don't see Blue Glow --

MR. MCDANIEL: *And live.*

MR. LENHARD: -- And live.

MR. MCDANIEL: *I know.*

MR. LENHARD: Well all five of the ones who got over 200 rem went to ORINS Hospital. And people don't know it today but the ORINS, now ORAU, Hospital was by far the biggest operation of ORAU at that time. There were eighty or so people in that Medical Division, including ten, roughly I'm saying, M.D's --

MR. MCDANIEL: *And that was located over near where the Hospital --*

MR. LENHARD: Absolutely I was going to tell you--

MR. MCDANIEL: *Okay.*

MR. LENHARD: -- where the Hospital is now. The Hospital was in buildings along, near where they are now.

MR. MCDANIEL: *Sure.*

MR. LENHARD: And ORAU was in part of the buildings. The Medical Divisions and the Hospital, the Oak Ridge Hospital was in an AEC building.

MR. MCDANIEL: *Right.*

MR. LENHARD: You know. They were providing the Hospital to the City of Oak Ridge.

MR. MCDANIEL: *Sure.*

MR. LENHARD: And the Medical Division was there. Their first -- they were established, the Medical Division, by AEC, to study how to use radioactive materials various kinds, to treat injuries. And to analyze exposures and so on. And they had a real sharp bunch of people. The head of the Medical Division was named Marshall Brucer. And he had a physical problem with his legs or something but he was a sharp guy and

he was really pushy. I remember when I first came in to talk to him as a health physicist, he immediately starting asking questions about medicine. And of course I didn't know the answers and he just going to jerk me around --

MR. MCDANIEL: *Right.*

MR. LENHARD: -- but I really had a great deal of respect for Marshall. After having done that, the Medical Division took care of these five people. I think three months they were all back in work.

MR. MCDANIEL: *Right.*

MR. LENHARD: But ORINS was doing a lot of other things. Test - patients who were kind of terminal patients and needed some kind of treatment and they'd do experimental treatment with them, to see if radiation would help them. Or if we could feed them a little bit of radioactive material, would it go to this organ or do that and that sort of thing. And they even did in that building eventually, whole body radiation of people to see what that would do. What kind of medical affects that would have --

MR. MCDANIEL: *Right.*

MR. LENHARD: And what kind of radiation you needed to use --

MR. MCDANIEL: *And that would kind of --*

MR. LENHARD: Everything that today is part of the Nuclear Medicine Program was developed right there in that group.

MR. MCDANIEL: *Sure.*

MR. LENHARD: With radioactive materials coming out of the Oak Ridge National Laboratory. So it was an incredible group. They eventually in the later days of the AEC, they said okay we've done kind of done enough of that stuff and toned it down a whole

bunch. And there are still some of those people around in Oak Ridge who lived in here and working in the hospital who were part of that ORAU.

MR. MCDANIEL: *But ORAU still, they still do training. They still do health physics.*

MR. LENHARD: Yes they have some area in the hospital for emergency training for --

MR. MCDANIEL: *Right.*

MR. LENHARD: For people to -- and they were doing some courses recently of training people what to do if you have a radiation accident.

MR. MCDANIEL: *Right.*

MR. LENHARD: The kinds of thing you need to do. But that --

MR. MCDANIEL: *But they eventually kind of became where the kind of source for people from all over the world to get trained for, isn't that correct?*

MR. LENHARD: Oh yes. People were coming in here from every place to learn about nuclear medicine and they taught them, you could take a blood sample and by looking at the blood sample you can tell how many rems of exposure a person has. Just by looking at something in the blood. I don't know what.

MR. MCDANIEL: *What were -- this is kind of off topic but we were talking about if you had 500 rem exposure, you have kind of a 50/50. But people are exposed to radiation, so is that like at one time or is it an accumulated risk.*

MR. LENHARD: Well it would have to be in a short period of time.

MR. MCDANIEL: *Right.*

MR. LENHARD: You know 500 in a couple of days.

MR. MCDANIEL: *Yeah. Right.*

MR. LENHARD: Over a couple days.

MR. MCDANIEL: [Off to the side] *You okay there Jasmine?*

MR. LENHARD: You get -- yeah there's a restroom there if you need it. You get a hundred and fifty mili-rem a year. We all get -- just from living.

MR. MCDANIEL: *Right.* Just --

MR. LENHARD: -- just from living.

MR. MCDANIEL: -- *From living. You get twice that much if you go out to Colorado.*

MR. LENHARD: You get twice that much if you go out to Colorado.

MR. MCDANIEL: *Is that right?*

MR. LENHARD: Yeah three times as much.

MR. MCDANIEL: *Is that because you're closer to the sun?*

MR. LENHARD: Yeah, that correct.

MR. MCDANIEL: *That's the reason you --*

MR. LENHARD: You're closer to --

MR. MCDANIEL: -- *some when you go on an airplane.*

MR. LENHARD: Yeah and your go on an airplane, your -- down here air absorbs a lot of the radiation coming from space and it doesn't get to you but you go up to fifteen thousand feet and boy you're getting most of it right there in that airplane. So you can get a big -- a big exposure. Well let's see if I've done enough on that. Let me go on and when. I'm going to go onto what I call UTAEC. Okay?

MR. MCDANIEL: *Talk a little bit about from what that's going in 1975?*

MR. LENHARD: What?

MR. MCDANIEL: *UTAEC --*

MR. LENHARD: That's when it ended. 1975 --

MR. MCDANIEL: *Okay good. Tell me about after the criticality accident. What did you do? What was your job?*

MR. LENHARD: At the Y-12 criticality accident?

MR. MCDANIEL: *No, no after that was over. You know go ahead and lead into the UTAEC.*

MR. LENHARD: Oh well I'm going to tell you about something way before that.

MR. MCDANIEL: *Okay.*

MR. LENHARD: When the Manhattan Engineering District had their first bomb, it was detonated here in the United States, out west.

MR. MCDANIEL: *Right.*

MR. LENHARD: And it was to find out what happens with a nuclear weapon. What is it capable of doing?

MR. MCDANIEL: *Right.*

MR. LENHARD: And the place where they detonated it, they built some houses and they put cars and airplanes and animals --

MR. MCDANIEL: *Sure.*

MR. LENHARD: -- around so when they set off the nuclear weapon they could see what the nuclear weapon impact was on all those kinds of thing. And about - that was about '45-ish. About two or three years after that, there were still some of the animals being there and they had to care for them out in the desert, which was difficult. So they sent the animals here to Oak Ridge, to take care of them and ORNL took care of them, or kind of halfway took care of them for about a year or something like that. And AEC decided that wasn't it and they came up with a very clever idea, why not the school of

Agriculture at the University of Tennessee. That's what they do. They take care of animals and that sort of thing. So they pulled UT in to take over the care of these animals and study them, study the radioactivity and everything. And that was a very important part of the program there. And UTAEC very quickly went beyond taking care of those animals to studying what radiation does to the animals.

MR. MCDANIEL: *Sure.*

MR. LENHARD: Almost like ORAU did with people, they did with animals. Large animals and small animals. What does radiation do? What are the impacts of radiation? How do you fix things? And they built among other things; they built a large animal radiation facility. Which was about a thirty square feet circle building with concrete walls around it with about ten or fifteen cobalt sixty sources down in it at various sources. Ever heard of this?

MR. MCDANIEL: *I'm not sure, I'm not sure. I think but I'm not sure.*

MR. LENHARD: Ray Smith did an article.

MR. MCDANIEL: *Right. Where was it located.*

MR. LENHARD: It was located over, you know where Freels Bend, Freels Bend Road goes out to the Freels Bend Cabin?

MR. MCDANIEL: *Right.*

MR. LENHARD: When you start down Freels Bend Road about a hundred yards.

MR. MCDANIEL: *Okay.*

MR. LENHARD: There is a road that goes off to the left --

MR. MCDANIEL: *Yes, Yes.*

MR. LENHARD: That road goes out to the large animal radiation --

MR. MCDANIEL: *Was that called CARL?*

MR. LENHARD: That was later --

MR. MCDANIEL: *Okay good.*

MR. LENHARD: That corner there where the school was --

MR. MCDANIEL: *Sure.*

MR. LENHARD: -- That was later CARL Laboratory.

MR. MCDANIEL: *Right. Right exactly.*

MR. LENHARD: Comparative -- and that means Comparative Animal Research Laboratory --

MR. MCDANIEL: *That's exactly right.*

MR. LENHARD: And I think it's still called that today.

MR. MCDANIEL: *Probably so.*

MR. LENHARD: I'm not sure. So anyway, out there was the large animal radiation facility. And what they do is put four or five cows in there and then close the doors to it and go over to a building behind a little hill and rise those sources out, those sources were down in the ground --

MR. MCDANIEL: *Sure.*

MR. LENHARD: -- with wires hanging down to them. And they'd pull all the sources up, so cows that are walking around, no matter where they going, they're all getting exposed.

MR. MCDANIEL: *Sure. Exactly.*

MR. LENHARD: They've getting exposed to radiation. Now that operated until when Watts Bar Dam was built. Now don't ask me what year.

MR. MCDANIEL: *Right.*

MR. LENHARD: '70 Maybe --

MR. MCDANIEL: *When it was starting being built. Yeah right.*

MR. LENHARD: When that was built suddenly the lake came up and it was sixty feet in a valley right there from this radiation facility.

MR. MCDANIEL: *Oh, wow.*

MR. LENHARD: And UTAEC did some more putting - put signs up. Do not come in and everything but after about, after about a month I was a health physicist and the deal we were personally responsible to protect the public. And I said guys you can't keep operating there.

MR. MCDANIEL: *Right. Right.*

MR. LENHARD: That's too dangerous. People are going to come in --

MR. MCDANIEL: *Right. Right.*

MR. LENHARD: -- and get exposed. So it was shut down and sources were taken out. They then built another facility right at the corner of that road that's still there today. Where they could radiate animals in small building and after about two years of the operation there, we had a radiation accident. A, one of the scientist who were putting a cow in there and it was radiating him. Went in the room thinking the source was down --

MR. MCDANIEL: *Oh really?*

MR. LENHARD: He went in the room. Normally when you open the door, the source went down but somebody had disconnected that --

MR. MCDANIEL: *Oh no.*

MR. LENHARD: So he went in and work on something, on something and I think he got 140 rem or something like that.

MR. MCDANIEL: *Right.*

MR. LENHARD: I've forgotten his name but his brother was an M.D. here in Oak Ridge so we had, it wasn't a criticality it was just an exposure --

MR. MCDANIEL: *Right. Just an accident, and exposures accident.*

MR. LENHARD: UTAEC also radiated seeds, and radiated plants and developed new kinds of plants that were for better for different things.

MR. MCDANIEL: *Sure.*

MR. LENHARD: By creating mutated seeds. And that was a very good operation.

Around '75 -- it was still, it was still UTAEC but headquarters called me. I was responsible for the R and D programs. And headquarters called me and said "Joe, the people down at UTAEC are not, they're not really paying attention. We're trying to do high quality science and they're doing farming down there."

MR. MCDANIEL: *Sure.*

MR. LENHARD: So could you get that, that operation moved to the Science Department at the University of Tennessee.

MR. MCDANIEL: *Oh I see.*

MR. LENHARD: So we can work with, you know --

MR. MCDANIEL: *Yeah.*

MR. LENHARD: -- PhD Researchers --

MR. MCDANIEL: *Scientists. Right.*

MR. LENHARD: -- And I said okay I'll do it. And I went over and talked to the President of the University of Tennessee and he said okay let me work on it. And he called me back in about a week and said, "Joe, the agriculture people are very powerful in the state of Tennessee and I'm not going to be able to do that. I can make them pay more attention to you but I can't get that out of the AG department."

MR. MCDANIEL: *Is that right?*

MR. LENHARD: And in about three days, I had transferred UTAEC to ORINS.

MR. MCDANIEL: *Is that right?*

MR. LENHARD: I had to.

MR. MCDANIEL: *Sure. Sure.*

MR. LENHARD: They were going to stop the funding if I didn't get somebody in there that would be scientist.

MR. MCDANIEL: *Right.*

MR. LENHARD: There was a guy -- the director of it was Pete Wahlburg at that time. And he understood what I was doing. He was appreciative of the fact that yeah, we needed science in there.

MR. MCDANIEL: *Right.*

MR. LENHARD: So anyway the CARL Laboratory then transferred to ORAU. They had done most the animals stuff over with anyway. It was not a big deal. But that was the history of that thing that other people don't know about --

MR. MCDANIEL: *Sure. Sure. You don't know --*

MR. LENHARD: --Large animals.

MR. MCDANIEL: --*You know and I imagine there are a lot of things that came that was just like the Medical Division, there were a lot of later developments that were a result of the work that was done --*

MR. LENHARD: Oh absolutely --

MR. MCDANIEL: --*One thing that I think of today is you see them irradiating raw hamburger meat you know?*

MR. LENHARD: Yeah.

MR. MCDANIEL: *So I'm sure the concept for that was a result directly of the, of that --*

MR. LENHARD: --of that sort of thing.

MR. MCDANIEL: --*of that sort of thing.*

MR. LENHARD: ORNL and the Biology Division had done massive amounts of research about radiation on mice.

MR. MCDANIEL: *Right.*

MR. LENHARD: And but they didn't go on to bigger animals.

MR. MCDANIEL: *Right.*

MR. LENHARD: They knew more about mice than anyone knows about people.

MR. MCDANIEL: *Oh sure, of course.*

MR. LENHARD: Okay uh, in -- in about 1968 I was the senior health physicist in Oak Ridge's operation office and DOE, AEC headquarters told ORO we need an integrated safety division at Oak Ridge. They had Industrial Safety was over here and Industrial Hygiene was here and Health Physics was here. And they said all that needs to be integrated and the -- the Sam Shapiro was the manager and they integrated it and made me the Director of the Safety Division. The first AEC ORO Safety Division.

MR. MCDANIEL: *Okay.*

MR. LENHARD: That was done in 1968, I became the Division Director for Safety across the United States. And I continued safety rule for -- well I'll move to the next thing.

MR. MCDANIEL: *Okay.*

MR. LENHARD: In 1970-ish, Bob Hart came here from Richland, Washington. He was the Deputy Manager at Richland, Washington. And he came here from Washington to become the manager.

MR. MCDANIEL: *Right.*

MR. LENHARD: After Sam Shapiro had, was retiring.

MR. MCDANIEL: *Right.*

MR. LENHARD: And Bob was a tiger, still here in Oak Ridge today. He lives in Oak Ridge today. And I talked to him from time to time. But he did a lot of things -- that were made me happy. One of the early things he did when he came here, headquarters told him look, ORNL, the nuclear people, the research people in Washington.

MR. MCDANIEL: *Right.*

MR. LENHARD: They said ORNL is doing their own thing and they don't pay attention to what we want. They're building reactors, we're not interested in and they're doing a lot of things that we don't want done. And we need you to fix that.

MR. MCDANIEL: *Right.*

MR. LENHARD: And the fixing of it was to remove Alvin Weinberg as Director of the Oak Ridge National Laboratory. And Bob worked with Washington and he work with Roger Hibbs, who by that -- Roger Hibbs was incidentally in that 9212 --

MR. MCDANIEL: *Oh was he?*

MR. LENHARD: --during that criticality accident. I was there with Roger. He was the one kind of in charge. But he worked with Roger and they established it that Weinberg would be told we need you in Washington.

MR. MCDANIEL: *Right.*

MR. LENHARD: We've got a job for you in Washington and up to Washington he went. And soon after that happened, he told me that he wanted me to take over the research program. Leave Safety, he would get another person to run Safety. But I would run the research program, which included ORNL and ORINS and ORAU and a facility in Puerto Rico and one in Virginia. I would become the Head of Quality Assurance and Classification. All those things were assigned to me --

MR. MCDANIEL: *Right.*

MR. LENHARD: --by him. So the first thing was -- Alvin Weinberg leaving and he told me to become the oversight of it. And Roger Hibbs was told to select somebody as the replacement director of the Oak Ridge National Laboratory --

MR. MCDANIEL: *Right.*

MR. LENHARD: And Roger hated all those people at ORNL because they wouldn't pay attention to him.

MR. MCDANIEL: *Right. --*

MR. LENHARD: They thought they were above him --

MR. MCDANIEL: *Kind of do their own thing?*

MR. LENHARD: -- He, we're doing our own thing and he just listened to Washington and we didn't pay any attention to you --

MR. MCDANIEL: *Right.*

MR. LENHARD: -- So he would not propose a single person at ORNL to be the Director but what he did was Herman Postma was the Director of an ORNL Division -- the fusion energy division but that was at Y-12 and Roger knew, Hibbs knew Postma and knew he'd work with him --

MR. MCDANIEL: *Right.*

MR. LENHARD: -- and pay attention to him, so by surprise Postma went up three, four levels in management and when, a year after I'd become Oversight, Herman became the Director of the Laboratory. And he and I had a great working relationship. Through his entire career, at the Laboratory and it became the manager of the Oak Ridge National Laboratory. Let's see what else. Bob Hart also when he came here to Oak Ridge, he was responsible to get the community support of what was going on. And he realized he had two counties here with different groups and about three cities impacted by what goes on in Oak Ridge. And their all telling DOE headquarters different things --

MR. MCDANIEL: *Sure.*

MR. LENHARD: -- That they think Oak Ridge needs. You know they need this, they need that, and Roger pulled all these together, all these people together and said I want you to form a group called the Roane Anderson Economic Council. And they are to represent all the people in this region and have one message for Washington about what needs to be done.

MR. MCDANIEL: *Right.*

MR. LENHARD: And sure enough they did that and formed the Roane Anderson Economic Council. When after I retired, I retired in 1990 and I was Director of the

Chamber and then the Director of the Roane Anderson Economic Council and Zach Wamp came to me and said, "Joe, I want you to name, change the name of the Roane Anderson Economic Council to the East Tennessee, I want it to be my whole region."

MR. MCDANIEL: *Sure. Sure.*

MR. LENHARD: "I want it to be East Tennessee Economic Council." So I changed the name --

MR. MCDANIEL: *Right.*

MR. LENHARD: -- From Roane Anderson Economic Council to East Tennessee Economic Council. And they still have the role of kind of being the spokesman for the area and pressing DOE and other federal agencies to do things that are good for Oak Ridge. Like right now we badly need that funding for the clean-up program for the waste management and clean up --

MR. MCDANIEL: *Right.*

MR. LENHARD: -- Program being increased from where it is today --

MR. MCDANIEL: *Right.*

MR. LENHARD: -- And it's been going down --

MR. MCDANIEL: *Right.*

MR. LENHARD: -- Which is a very bad for our program --

MR. MCDANIEL: *Sure.*

MR. LENHARD: One of the things I did after I got in and became the Director of the Research was when there was new funding -- everything that was done at the three AEC plants was done inside the fence --

MR. MCDANIEL: *Right.*

MR. LENHARD: -- Everything, I mean they got more money, hired more people, or brought contractors in --

MR. MCDANIEL: *Right.*

MR. LENHARD: -- But it's all inside that fence. And I was working to increase the kind of things that we do and I pressed them to subcontract stuff. And have it be out here in the community, it doesn't have to be in there.

MR. MCDANIEL: *Right.*

MR. LENHARD: And lured SAIC here to be a contractor with her supporting the operations inside the fence. And it was during the time that suddenly federal agencies were required to do safety analysis. For you want to build a building, you do a safety analysis. You want to start a new program, you do a safety analysis. And the federal agency is saying what the hell a safety analysis is? And we set up some people quickly, we knew how to do it.

MR. MCDANIEL: *Sure. Sure.*

MR. LENHARD: We set up some people who could inform other federal agencies, Army, Navy, Air Corp, everybody. Hey you need to do safety analysis; we can do it for you.

MR. MCDANIEL: *Sure.*

MR. LENHARD: The -- that's called Work for Others. The Work for Others Program, when I took over this entire thing, was about sixty thousand dollars a year or something like that. And I increased it to -- a three sixty million.

MR. MCDANIEL: *Right.*

MR. LENHARD: -- I increased it to fifty million dollars.

MR. MCDANIEL: *Is that right?*

MR. LENHARD: To do these things for other federal agencies.

MR. MCDANIEL: *Sure. Right.*

MR. LENHARD: And headquarters told me Joe you can't, we don't want you doing all that stuff at ORNL, they can't do that three hundred and fifty million dollars' worth of work --

MR. MCDANIEL: *Right.*

MR. LENHARD: --So we put it at K-25 but the work from K-25 was just separated out, some went to Y-12, some went to ORNL, you know? That was something that DOE headquarters didn't have control over.

MR. MCDANIEL: *Right.*

MR. LENHARD: We had it all, one company running all three plants.

MR. MCDANIEL: *Right.*

MR. LENHARD: So we could put the amount of work we needed to, and a lot of it was in information technology --

MR. MCDANIEL: *Right.*

MR. LENHARD: -- Was one of them and the other was safety analysis. And those two things were close to most of the three hundred and fifty million dollars a year those we that we were getting. --

MR. MCDANIEL: *Let me ask you a question here.*

MR. LENHARD: Okay.

MR. MCDANIEL: *In your career did you always work for an AEC, DOE or did you ever work for any of the contractors? You were always --*

MR. LENHARD: I, the contractors worked for me --

MR. MCDANIEL: *Exactly. That's what I meant.*

MR. LENHARD: -- I never worked for a contractor. Now I might, I want to talk about CRO because I'm still very active in the Community Reuse Organization as you're aware. And in 1990 when the Cold War ended, DOE was getting ready to shut things down all over the country.

MR. MCDANIEL: *Right.*

MR. LENHARD: The weapons -- most of the weapons facilities were shut down and the Congress was getting blast from all over the country. Hey DOE shut down facilities; we've got 2,000 employees who are going to get laid off here.

MR. MCDANIEL: *Right.*

MR. LENHARD: So the Congress came to DOE and said look, you're doing all that shutting down we what you to do something that will mitigate this shutdown impact, the job's impact. We want you to do things, train employees, create new jobs, do things like that to mitigate the Y-12 -- though Y-12 was shut down, largely shutdown.

MR. MCDANIEL: *Sure.*

MR. LENHARD: So they said we want you, okay Congress told DOE go to these things and about a month DOE came back with about a five hundred million dollar budget to the Congress and said here's what we're going to need and Congress said come on, for fifty years we've been giving you assets, land, buildings, technologies --

MR. MCDANIEL: *Right.*

MR. LENHARD: --Use those assets to develop this money. Don't come to me for more money at a time, you're not getting more. So DOE went away again and came back

very shortly and said gee I'm sorry but our charter says if I provide an asset outside of the Federal Government, I've to charge fair market value for it. That a requirement for it and the Congress said okay, and in two weeks they passed a resolution that created CROs, Community Reuse Organization who are not subject to the DOE rule of paying.

MR. MCDANIEL: *Is that right?*

MR. LENHARD: So, so that's the unique thing of the CRO--

MR. MCDANIEL: *Right.*

MR. LENHARD: Is DOE for no reason at all can give us anything they want to and they don't have to charge us a penny for it and that's what they do--

MR. MCDANIEL: *Right.*

MR. LENHARD: --We kind of started that law, that law was passed, I'm thinking '93-ish, '92, '93. And in '94 I was, I was now the East Tennessee Economic Council, '94, '95. And we were -- we were asked to analyze where we could make an industrial park --

MR. MCDANIEL: *Right.*

MR. LENHARD: --And I very quickly in '70, '94 put in a request that Horizon, which is now Horizon Center, that was called ED1. That AEC, that DOE should give us ED1 to be our industrial park. And in '95, before we had a CRO, we were forming the CRO but we hadn't finalized it. ORO Jim Hall sent me a letter authorizing our ownership of Horizon Center ED1 '95. I still got the letter; it was addressed to me as e-Tech.

MR. MCDANIEL: *Right.*

MR. LENHARD: That was a very good move. They later gave us roughly 11 million dollars -- is that right? Yeah, to put in that entire beautiful infrastructure out there at Horizon.

MR. MCDANIEL: *Right.*

MR. LENHARD: Each one of those bridges we put across there, beautiful bridges, they each cost 750 thousand dollars.

MR. MCDANIEL: *Right.*

MR. LENHARD: So that's really nice infrastructure out at Horizon Center. We've got a great, great place out there. And we recently - CROET was never really outstanding in our ability to sell--

MR. MCDANIEL: *Right.*

MR. LENHARD: Space at Horizon Center. So what we did, or K-25 either, so what we did about a year ago, or a little more than a year ago is give that 20 million dollar Horizon Center to the Industrial Development Board --

MR. MCDANIEL: *Right.*

MR. LENHARD: --And the City of Oak Ridge.

MR. MCDANIEL: *Sure.*

MR. LENHARD: -So they could go re-coop the -- as I said that was not our forte --

MR. MCDANIEL: *Sure.*

MR. LENHARD: --We had a bunch of scientists and eager beavers --

MR. MCDANIEL: *Right. Right.*

MR. LENHARD: Getting out and selling something was not our ability.

MR. MCDANIEL: *Sure.*

MR. LENHARD: So and it is starting to move very fast right now. That their getting things in there, Chinn is building a building for ORNL. ORNL is a building a building out at Horizon Center --

MR. MCDANIEL: *Sure.*

MR. LENHARD: --With Rick Chinn doing it. So that's a very exciting. Let's me see what else, CRO is very, very financially well off -- we're non-profit you know?

MR. MCDANIEL: *Right. Right.*

MR. LENHARD: I say well off, we're able to do things --

MR. MCDANIEL: *Right.*

MR. LENHARD: -- The buildings at K-25 we had to invest a great deal of money in the building to bring it up to State of Tennessee standards --

MR. MCDANIEL: *Sure.*

MR. LENHARD: --City of Oak Ridge standard. And then sell the building --

MR. MCDANIEL: *Right.*

MR. LENHARD: --And so we've done about five buildings like that and the fixing the roads and when we get the roads fixed we give them to the City --

MR. MCDANIEL: *Right.*

MR. LENHARD: --We are working right now with the railroad authority. I don't know whether I ought to get into this. The railroad authority would like to have a visitor's center --

MR. MCDANIEL: *Right.*

MR. LENHARD: And CRO is working with them--

MR. MCDANIEL: *Sure.*

MR. LENHARD: --To make that happen at the present time--

MR. MCDANIEL: *Right.*

MR. LENHARD: I might go on, how much time have I spent?

MR. MCDANIEL: *We've been going on almost an hour.*

MR. LENHARD: Okay we'll I'm going to finish right now.

MR. MCDANIEL: *Okay.*

MR. LENHARD: One of the other things about ten or twelve years ago. The Congress, the Museum was funded by a specific thing in the DOE budget --

MR. MCDANIEL: *Right.*

MR. LENHARD: --funding --

MR. MCDANIEL: *Right.*

MR. LENHARD: --One million dollars a year for the Museum of Science and Energy. And the Museum of Science and Energy finally roughly ten years ago came to DOE, look the operation of museums are not in your charter.

MR. MCDANIEL: *Right.*

MR. LENHARD: So we're not funding that anymore. That's, that. So ORO very quickly gave the, the Museum to ORNL and told them to get funding from the other two, Y-12 and K-25 --

MR. MCDANIEL: *Right.*

MR. LENHARD: --And to run the Museum and they were doing that, uh they tried to get ORAU to take over ownership and so on of the Museum and ORAU finally said no that cost too much money for me --

MR. MCDANIEL: *Sure.*

MR. LENHARD: --And then they tried to get the City of Oak Ridge to take it over and operate it and the City of Oak Ridge, no that's too much money so we established this foundation and we were prepared to do it and DOE never got it approved--

MR. MCDANIEL: *Oh really?*

MR. LENHARD: --And so we just about gave up. Two years ago, we got ORAU again -- proposed taking over ownership of the Museum--

MR. MCDANIEL: *Right.*

MR. LENHARD: --And we applauded that. They're right together, you know? --

MR. MCDANIEL: *Sure.*

MR. LENHARD: --We the ability to have students be part of both of them and they're all integrated there and it's a beautiful relationship. So they proposed taking over the ownership and DOE screwed around for two years and finally things had changed and ORAU recently said, "we can't do that I'm sorry" --

MR. MCDANIEL: *Wow.*

MR. LENHARD: -- Things have changed now and we can't take it over. So we're still working with a Foundation to see how we can help the Museum. We need that museum, that's a classy museum but we've got, it's still being funded the way I told you-

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MR. MCDANIEL: *Yeah--*

MR. LENHARD: --ORNL. So that's it.

MR. MCDANIEL: *So you're staying busy? You stayed busy since you retired?*

MR. LENHARD: Oh I'm busy, I'm very busy. Yeah. With e-Tech and CRO and the Museum Foundation--

MR. MCDANIEL: *Sure. Sure.*

MR. LENHARD: -- I stayed busier than - Craven always says "Lenhard, you work more now than you did when you were a federal executive."

MR. MCDANIEL: *You don't know whether to take that as a compliment or an insult do you?*

MR. LENHARD: Right.

MR. MCDANIEL: *All right well, Joe, I appreciate you telling us about your life here in Oak Ridge.*

MR. LENHARD: Well thank you very much for the opportunity. Hope that it serves its purposes and needs.

MR. MCDANIEL: *Thank you very much.*

[END OF INTERVIEW]