

**Oral History Project
Interview of Philip Leahy
GJO Library, 1993**

Interviewer 1: That— that— you didn't know where this stuff was going? The people that worked here didn't know. So the mood between '43 and '46, was it — did you feel like you were on the frontline of something really —

Leahy: Well, we knew –

Interviewer 1: — really exciting?

Leahy: Sure. We knew — we knew that, first place, it was classified. We just didn't go blabbing around and many of the statistical reports regarding recoveries and those kinds of thing were all classified. The bills, the orders for materials, and so forth— there was no indication that it had anything to do with the war effort. The only people that really knew it were the people selling it and the peop— When I went to make the contracts with them, they—they knew what we were doing with it, that it was for the war effort. And we had a priority that we could use. But beyond that, I knew that they wanted those tailings processed.

Interviewer 1: Did you have people here who would come to you to work below you and say, “That's not what we're doing”?

Leahy: No.

Interviewer 1: They just knew it was for the war effort, and that was enough?

Leahy: Yeah.

Interviewer 2: The Colorado Plateau is a large, kind of a large area, and I'm wondering how you knew where the tailings would be found. You mentioned they were milled in — here in Grand Junction.

Leahy: Well, of course, Blair Burwell was the manager for U.S. Vanadium Company. And U.S. Vanadium had been hired to run the mills and so forth.

Interviewer 2: And they were in operation when you got here?

Leahy: Well, they were already processing under the metals reserve program. They expanded their effort to cover the Manhattan District work. And, of course, they just hired people like they've been hiring them to do their own. They just gradually grew bigger, is all, and were running another plant across the river from their existing plant. So, there was no — nothing there that

would excite people to say, “Well, what's going on down there?” because they already were running a mill there and one at Durango Quarry. Now, here, people never came down here. We never saw people coming down that hill over there, because there was nothing down here.

Bill Chenoweth: Wasn't even paved, was it?

Leahy: Right. It was dirt road. And the community — you never saw people driving by and stopping and looking, or anything else. So you didn't have that problem. We had a fence around it, but it wasn't really much of a fence. It was just kind of a barricade, in my opinion.

Chenoweth: I can, I can [inaudible] a little on this is that, that because this carnotite ore has both uranium and vanadium in it, and it's a— it's a— potassium uranium vanadate is the chemical formula. This— this carnotite had been mined down here, I think first of all, for the radium in the— in the teens and 20s. But then, for the war effort, they needed vanadium to harden steel. So they had these vanadium — besides the mills Phil mentioned— there were mills that were in Blanding, and down south of Moab, and Dry Valley, and Gateway, and other places. And so, when the Manhattan District started looking for, for a domestic source of uranium, they— they had research done and they said, “The only place we know there's really uranium is probably in these tailings of these existing vanadium mills.” And it's Phil Merritt that came on, and he mentioned earlier. And that— what— they see for many years. He was sent out here in December of '42 to check this out. And then apparently, they made a good report saying that there are piles of these vanadi— these tailings of vanadium mills that got uranium and this is — that's going to be the easiest place you can get uranium here in the United States, because the only other known places were up at Great Bear Lake in Canada and the Shinkolobwe mine in the Belgian Congo. And they were in different countries and the Belgian Congo was clear across the Atlantic.

Interviewer 3: When did you, Phil, become, become aware of what, what you were doing here was obviously going toward the bomb?

Leahy: The day after August 6th of 1946 — or '45, when we got a telegram from General Groves telling us that we'd accomplished the mission. And that's when they ran that test bomb in Alamogordo, blew up the— the bomb. And I've got a sample in my little satchel, wherever it is. I've forgotten where I—

Interviewer 3: Over there.

Leahy: —of the fused sand right at the ground site zero at Alamogordo. And this was prepared and sent to those of us that had worked as— in charge of various installations all over the United

States. People in Chicago got them, and then other places that were working on it. It was just kind of a souvenir, is all.

Interviewer 3: That was just a few days before they sent the bombs over to Japan?

Leahy: Yeah. You see, they used them—

Chenoweth: Two weeks.

Leahy: —two weeks, wasn't it?

Chenoweth: About two weeks from Alamogordo to—

Leahy: Right.

Chenoweth: —Hiroshima.

Leahy: Right. The bombs were ready. They— and if it worked, they were prepared. They'd already worked out the schedule of how they would get them over there, and so forth. And, of course, the scientists that were involved in the— in the actual detonation at Alamogordo are the same guys that flew in the plane. They actually armed the bomb from Los Alamos, the men from Los Alamos.

Interviewer 1: When you found that out, when you annou— or, when it was announced, you got your teletype, was there— is it a lot of great rejoicing here, that you—

Leahy: Yeah.

Interviewer 1: Because you knew what it—

Leahy: Everybody.

Interviewer 1: Can you talk a little bit about that?

Leahy: Well, there wasn't any big party or any great hurrahs, but everybody knew that the thing had— what it was about. Why, and what it accomplished. And, of course, then the newspapers— your local newspaper here carried articles about anticipating what the effect is going to— was going to be on the war with Japan and how quick things would be settled. And they talked about how many lives had been saved, probably, of military personnel that would have died in trying to invade Japan. They'd already gone through enough in the islands. So—

Interviewer 3: In those early articles, nobody made the connection with— with was happening?

Leahy: Oh, no, no, no, just with the bomb.

Interviewer 3: Yeah.

Leahy: Of course— Go ahead.

Chenoweth: As I recall, you couldn't even use the word “uranium” in your reports to—

Leahy: No.

Chenoweth: to Colonel Rudolph.

Leahy: That's right.

Chenoweth: You had to use the code word.

Leahy: Right. Right.

Interviewer 1: What was the code word that you—

Leahy: I couldn't tell you.

Chenoweth: S-37, wasn't it?

Leahy: I— I think it was, but, I don't remember.

Chenoweth: They— you could, you could use the word “carnotite,” but you couldn't use the word “uranium.”

Leahy: That's correct.

Interviewer 4: Yeah, I did. You filled in a lot of early history of this site, as well as— one thing I never really understood was the original status. I had— I heard that it was a homesteader that had this bottomland property here. You know what the status of that was? Whether it really was a homesteader or not?

Leahy: The, the man that owned it, I don't know whether he had homesteaded or not. He had operated it as a gravel pit.

Interviewer 4: Oh, the gravel pit. It wasn't a farm?

Leahy: Oh, no, no, no, no, man. It looked like no-man's-land when you first looked out here because it looked much like some of the areas that you've probably seen where they did— what is it? The— the blaster mining. Yeah. Where big piles of gravel and potholes of water. Because—

Interviewer 4: (unintelligible) —about the gravel pit.

Leahy: It— it looked like a gravel pit when you came down the hill and walked around over it. Even the area where we put the so-called refinery that we were trying to pinpoint today, when we were walking around out there. Why, we actually had to come in there with a dozer and level up that area, push in the piles of material, and we had to steal from other piles to get enough area to build a mill on, because basically, it had been pretty well harvested for gravel in years prior to that.

Interviewer 4: Yeah. Another question I was wondering here. Can you tell us when the first railroads [inaudible]?

Leahy: It was here when we came.

Interviewer 4: It was already here?

Leahy: Already here.

Interviewer 4: So, the gravel—

Leahy: Yeah, already here.

Chenoweth: Joe Hopkins of USD that worked here said, “Well, this is one of the reasons they chose this site.” It was just a secluded little swamp land along Gunnison River down behind the Cemetery Hill. And nobody from county bothered.

Leahy: See, we had a natural boundary around almost 270 degrees of the thing with the river flowing around this. People couldn't— couldn't— couldn't get across. Then, no one came down in here because there was nothing here but willows and salt brush, and so forth.

Interviewer 2: [inaudible] the waste process down here on –

Leahy: No, it was done at Uravan and Durango. Yeah.

Interviewer 2: What process happened to it?

Leahy: It was a refining process in which the sludge that was produced at the Durango and Uravan plants were brought in here and reprocessed chemically to separate as much of the vanadium from that sludge as we possibly could, which was— meant we were upgrading the uranium sludge. That's what we were after, was to take out of it all we could, and the vanadium had some value to it, and that reduced problems later on in other refinement.

Interviewer 3: Did the gentleman you bought the land from — was he curious at all about why the U.S. Army wanted to buy his land?

Leahy: No, we leased it first, and then bought it. Sure.

Interviewer 3: Lease to sell.

Leahy: Right, because he had a lot of holdings in this area, and he didn't have any use for it. In fact, he probably felt he was living high on the hog because it wasn't really good for much else.

Chenoweth: \$10,500 for 55 acres.

Leahy: Right, in those days. Right. (inaudible cross-talk)

Interviewer 4: While you were producing, were you storing materials here?

Leahy: No. The— what we call the yellowcake, which is the— the stuff that went on into further processing to get— upgrade the uranium content of it, we shipped that as fast as we could get a carload of it. The vanadium, we stockpiled it, and it was being stored in 55-gallon full open head drums, because it was dry when you put them in the drums and it was not hygroscopic. It wouldn't pick up any moisture. So it could be stored that way. And it was an easy way to handle them— handle it, instead of putting it in paper bags or something else. And we— we had buildings here. We had moved old, CCC barracks from several camps around in the West here — western Colorado — brought them down here. Just took the shells, the sides, and the roofs, brought them down here. And we built big, heavy floors because of the weight, and set the floors at railroad car elevation so that the car could be loaded and unloaded from there.

Interviewer 5: We're very concerned, obviously, with the— the health concerns now, the radiation level.

Leahy: Right.

Interviewer 4: Were you guys aware of those problems back then?

Leahy: Never heard of it until I got— got to Idaho. And the one I should have been worrying about most is that confounded pile of Dr. Fermi's under the squash court.

Interviewer 5: In Chicago?

Leahy: Right. Because, man, he'd really done the job there, you know?

Interviewer 1: To follow up on that, you know, also now we're all concerned about the chemicals that we come in contact with and our personal protective equipment and everything else involved with that. Watching some of the old, old, old films that we have around here. Obviously, that stuff, it is all so new.

Leahy: The only thing that we used was try to protect the men from acid burns and those kinds of things, and from the dust. We did provide masks where we had dust problems, like handling the tailings. They got real dry. They were quite dusty. And you go to dump them, there'd be a cloud of dust come up. Those kinds of areas. But beyond that, our most concern was concerning the acid contact with the body and the molten metal when it was being cast over here.

Interviewer 1: You said you had no [inaudible] accidents or any injuries when you were on site or anything? You saw some of the construction stuff going on.

Leahy: Mhm.

Interviewer 1: Not construction, but the—

Leahy: Digging.

Interviewer 1: Yeah. I guess everybody here kind of feels like they're in the dark as to what might be out here [laughing] between '43 and '4— I mean how well did you do for disposal? What did you do to—

Leahy: In '43? Well, in '43, we had no reason to be dumping anything anywhere. Anything that went on there was after we left here in 1946. And up to '49, when I was still here and left in October '49 to go to INEL, we had never dumped anything out in that area. All we did was just rub all the gravel piles that were there when we started, built the mills. And it's possible that in the process of separation of the vanadium and the uranium from the so-called green sludge from the plants, that the tanks that we worked with were wood stave tanks and— but they could leak, and did leak. There's no kidding about that. Now, what went on to the floor. There were no drains in the floor, provided in the floor. I don't remember any flood anywhere here. I do know that when we did the— well, I guess you call it rinsing of the precipitate, the solutions that were involved here, that that was done with river water. It provided lots of water here for us. And we just loosed that to the river. And the only thing we checked on that was the acidity of it, whether it was acid or caustic, and so forth. It was a neutral, supposedly neutral solution based on the controls that were maintained by the plant.

Interviewer 1: Any other waste you had, maybe, hauled off?

Leahy: There was no other waste because the material that was separated became two different products, and one was stored — the vanadium oxide — and the other uranium, or yellow sludge, was shipped to Tonawanda in the oil drums. For— help the next step of upgrading.

Interviewer 2: When you came to Grand Junction, were you able to bring your wife and family with you?

Leahy: Let's see, I got here the 23rd of March. I think I picked her up— it was this waif over here. And two— and one other one, her sister. There were two girls at the time. I went back and they were living in Syracuse, where I had been working in charge of building that air base before I was commissioned. And I picked them up, and we drove across country, hauling two kids, young kids, and so forth. And I got to— to Denver the night before. It was getting dark, starting to get dark. I told my wife, I said, "I got to be in Grand Junction. Tomorrow." And we came over Loveland Pass in the middle of night. Moonlight night. And roads were plowed. They really had that plowed. And of course, we got over this mountain and I was getting sleepy. I said, "Well, we'll stop and rest a while." I went to sleep, I think, a real wide road. But, as we were going along, I saw this— these bales of hay, and I said to her, "You notice those?" And. "Yeah." And she didn't know what they were for and I said, "Well, the mountain troops are up in here somewhere training "from Camp Hale." And, I think I'd been asleep about an hour and she woke me up. She saw these flashes of light in the mountains, and they were up there practicing. And actually, while we were still there, there were two or three trains of mules went by with the bells on them, and so forth. Guns on them.

Interviewer 3: Do you know why you were selected for this particular duty? Did General Groves ever tell you that? Or Colonel—

Leahy: Well, I didn't know anything about General Groves until— well, probably— I guess I did— I did know about him because I had a letter that I carry, or had, that was signed by him. But the people that I dealt with was Colonel Rudolph in Fifth Avenue in New York. He was my CO and, of course, I know that I was selected to come here before— long before he was aware that I was. And I think the reason for it was, there's a man by the name of Colonel James Marshall who was the district engineer for the Manhattan District. He formed it, started putting it together, was well down the road before General Groves became an active part of it. I think the primary reason for that is that, you know, General Groves made his reputation building the Pentagon. He was an officer in charge of building the Pentagon. And that's how he came to get this project, I think from that.

Interviewer 3: Was Colonel Marshall—

Leahy: I had worked for him for eight or ten years as an engineer in Syracuse and Binghamton, New York district. Yeah.

Chenoweth: You know, when they moved the Manhattan district from Manhattan down to Oak Ridge in the Castle, didn't they replace Colonel Marshall with— with Ken Nich— Ken Nichols?

Leahy: Ken Nichols. And Ken Nichols was James Marshall's, exec officer in Syracuse district. They were, I think, either in the same year out of West Point or a year or two apart. They were friends.

Chenoweth: And Nichols had worked on the Panama Canal.

Leahy: Right.

Chenoweth: It was his— it was his expertise, the Manhattan—

Leahy: Right, right.

Chenoweth: Right. Why did they replace Colonel Marshall? He just didn't want to go to Oak Ridge? Or did he get a different assignment, or...?

Leahy: Well—

Chenoweth: I've always wondered about, in reading the history.

Leahy: Is this going to be quoted in the papers? [laughing] The story goes that, of course, Groves got the appointment after the thing had been underway, and Marshall had done a good job at it. And Groves was not one to share much of the limelight with anybody, see, and he got him sent to the Pacific, and —

Chenoweth: Oh, okay.

Leahy: Yeah. Which ended up in his death because he, he got into a couple of battles where apparently, he did— he didn't live long after he recovered from the results.

Chenoweth: One question I was going to ask about early days here, is that, when you set up the Colorado Raw Materials Office, wasn't there another group of geologists here other than the USGS that were assigned to the New York Exploration Branch and the Division of Raw Materials?

Leahy: Well, I'm not aware of that, Bill, because, see, I came— I came out of the New York office to start with, see. Brookhaven Lab, where I was working as assistant manager and head of the engineering division— the man who sent me out here knew that I had been here before, and he was in the New York office and the work at Brookhaven was under the New York office. So he sent me out here. Well, then came the Atomic Energy, see, the setting up of the Atomic Energy — in the beginning to maneuver for positions in some of the operations. And it ended up that they brought John Gustafson, and Jesse Johnson, and Frank McPherson, who were a team that worked in the Metals Reserve Program in there, because this was a matter of developing and

encouraging mining and production of the metal, really. So that's how come. And there was a feud going on between New York. I actually got caught in the middle of that one.

Chenoweth: The reason I ask was that when I started here, it was then that we were in the Grand Junction Exploration Branch of— of the Division of Raw Materials, and some of the earlier maps and things had been prepared in 1948 or '49 were all labeled New York Exploration Branch the Division of Raw Materials.

Leahy: Right.

Chenoweth: And some— I think one of the old timers had been here all that I have, Bill Dodd, said that originally the geologists that were sent here by the AEC were not affiliated with—with your procurement program or the New York office under Jeff Johnson.

Leahy: Right. Yeah.

Interviewer 1: Is there anything we haven't asked you that [laughter] stands out in your mind from those— from '43 to '46? Anything— one thing that maybe you haven't touched on that, that you remember vividly?

Leahy: Well, I can't think of anything in particular. I think the second go around here, from— in '47 to '49, was a lot easier in one way that, I knew a lot more people, knew more about the country, and so forth. But again, the one thing that was significant in looking back at it in both experiences here was this is what we want to get done: go out and do it. And just keep us informed of what's going on. If we need some help, tell us. And that was about it. And that was— and being an individual, and all you had to do was get it done! [laughing]