



K-25 Oral History Interview

Date: 3/11/05

Interviewee: Ed Kirstowsky

Interviewer: Connie Callan

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[1:00:06]

Ed Kirstowsky

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[crew talk]

Callan, C.: -- interviewer today, and the date is 3/11/05. And the first is a real simple short question which is simply state your name and spell your name.

Kirstowsky, Ed: Ed Kirstowsky. K-I-R-S-T-O-W-S-K-Y. And I'm a first-generation German. Background.

Callan, C.: Would you mind giving your age --

Kirstowsky, Ed: No.

Callan, C.: -- and when you were born?

Kirstowsky, Ed: I'm 84 1/2.

Callan, C.: And just briefly, what years were you at Oak Ridge and what kinds of jobs did you have when you were there?

Kirstowsky, Ed: I came to Oak Ridge in 1944, and I left -- retired in 1984. And I worked in about five different divisions in K-25.

Callan, C.: Which divisions did you work in?

Kirstowsky, Ed: I worked -- started in the Equipment Test and Inspection Division, the Process Division, the Engineering Division, the Maintenance Division.

[1:03:54]

Callan, C.: Talk about where you were born and if you want to talk about your childhood.

Kirstowsky, Ed: Yeah. I was born in Detroit, Michigan in 1920. And I was the fourth child in the family. My father died when I was 3 1/2, and my mother moved us up to a town called Saginaw, Michigan, and it's about 100 miles north of Detroit. And I was raised in Saginaw, Michigan. The reason why she went there was because her parents were living there. And the Depression came along and -- that's the only thing (laughing) that's on my mind more than anything, the Depression. In a General Motors town, when they weren't making any cars during the Depression, jobs were pretty scarce, but I was - - went to high school and finished high school in Saginaw, Michigan and then went to the University of Michigan. And from

-- from there, I was picked up by the Chrysler Corporation to attend the Chrysler School of Engineering. Chrysler at that time was picking about 30 engineers from around the country with each graduating class, and we went through a course on automotive engineering which -- from which we were awarded -- a 2-year course -- in which we were awarded a -- a Master's degree in Automotive Engineering, which was approved by the University of Michigan.

[1:06:39]

Callan, C.: And where was that? Where is that University of Michigan? Was that in Champaign?

Kirstowsky, Ed: That's in Ann Arbor.

Callan, C.: Ann Arbor? Okay. And that background was very helpful for you when you ended up working?

Kirstowsky, Ed: Well, I graduated with a degree in Metallurgical Engineering from the University of Michigan. And I worked mostly in metallurgical engineering at Chrysler. And when I came here, I was picked for the Equipment Testing/Inspection Division because we were given a responsibility of finding out what was causing the equipment to fail and how to -- how to improve it to prevent future failures.

[1:07:56]

Callan, C.: We got through all these questions. You're doing great, thank you! We're going to go into working at K-25 general questions. Why did you come to K-25? What attracted you to come and how did you hear about it?

Kirstowsky, Ed: Well, when I was at Chrysler, Chrysler had a lot of engineering projects going -- or projects going where they needed engineers and the government gave them priority for engineers, and during the war, I -- I -- well, they would've put me in the service except that Chrysler said no to all the engineers they had, or they hand-picked the engineers that they wanted. And I worked -- finished the course that they had there. The government told Chrysler in 1945 in about February or so that they weren't going to be able to hold engineers anymore. And so, they suggested we go down to -- that is, everybody in the class, go down to downtown, talk to a fellow who was interviewing engineers. I went down along with

the rest of the gang and it was a employee of the Y -- of the K-25 plant that was trying to pick up engineers. And he offered us a free trip down there, couldn't tell us what it was for, but at the time we were talking to him, the war was just about over and most of us had refused offers from the services for officers' rank. And yet it was so late at this time that we didn't know, if we were just thrown in our draft boards, just where we would end up. And so we all came down here and they were able to keep us all down here.

[1:11:20]

They were outfitting for the K-25 plant, which when I came here, they just started operating a couple of buildings. The main building, we call a building, was a -- was a series of buildings that were boxed together and formed a big U, which was about a mile long from one end to the other, so they had just started on the one leg and got it operating. They needed help real bad.

Callan, C.:

What were your first recollections when you came to K-25, of Oak Ridge and of the facility itself? Do you remember that day or week that you arrived?

[1:12:24]

Kirstowsky, Ed:

(laughing) Yeah. Coming from the city, this town was pretty (laughing) pretty distant. The mud -- they had thrown us all together here. Well, one thing, they put us in a fenced-in area here; you had to have a badge to get in and a badge to get out, and -- there were just so many people here. And there -- most of them -- a good share of them were single. And it was quite a job for the government to handle them. I think the peak enrollment at Oak Ridge -- peak population, I should say, was about 90,000. That's about 15,000 now. This is when they were building buildings, building houses, and what have you.

Callan, C.:

Did you work at K-25? Were you ever transferred to Y-12, X-10, ORNL, just talk about your progression of your jobs.

[1:14:06]

Kirstowsky, Ed:

Yeah. Well, no, I worked at K-25 all the way through. I told you there was a division, Equipment Testing/Inspection Division,

where we were responsible for seeing that the equipment was operating properly, and I worked at that division for about 5 years, and it was obvious at that time -- the whole plant was running -- and it was obvious that things were running smoothly; there was no need to have a lot of people around.

The division itself more or less broke up early, our part of it was, and I was -- I was transferred over to the Process Engineering Building, and -- or Process Engineering Group. This was a group that was responsible to the Operating Department, and I worked there until the time that they decided that they weren't going to need that division anymore.

And I was moved over to the Engineering Division. I worked there about 3 years, and I was assigned to the welding school because of my met -- metallurgical background and I was in the -- they did some more adjusting and they transferred the welding facilities -- the responsibility for operating -- to the Maintenance Division. And I was a -- I had a head of the Welding Division, which was responsible for all the welders in the plant and seeing that they were qualified to be working on the jobs.

[1:17:06]

And we were given all sorts of assignments for building stuff that - - it's unbelievable all -- all the things.

Callan, C.:

Well, that's interesting you worked with welders because you must've had -- and other interviewees talked about the skill of the welding in that facility. Can you talk about some of the welders and their skills and capabilities, which must've been cutting edge?

Kirstowsky, Ed:

Well, we had some tough problems. I'll tell you, the -- the biggest gem in welding was joining steel to aluminum. Steel melts at around 3,000 degrees and aluminum about 1,200, and we had to have this weld made it -- made it large piping so that the system would operate. And this was just one of the -- one of the problems that came up that was solved. We made -- we were given work from other agencies like the reactors, they would ask us to build fuel rods and so forth. This is -- doesn't sound like much (laughing), but. We figure that they have to be inside of the reactors while it's operating. It's -- it's quite remarkable that they can get anything to do that.

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[1:20:03]

Callan, C.: It's steel to aluminum. It's amazing, I think.

Kirstowsky, Ed: Yeah, it is.

Callan, C.: (laughing) I'm not certain that most welders can do that.

Kirstowsky, Ed: Yeah. That's for pipes about that big, too.

Callan, C.: And that was common, or that was an unusual situation?

Kirstowsky, Ed: Well, it was just one of the joints -- welding joints that had to be made for the system. The system was a bunch of buildings that were together, mile long, and so forth. And then they came along and built other buildings that were kind of -- were a little bit more advanced. And our building at -- an original K-25 building was the largest building in the world at that time, and yet, when we got through building the attachment to that, the --

[crew talk]

-- we had K-25. K-27 was a little short extension, but the K-29 was a little bit bigger. It had all the new pumps and the system was entirely new and 27, to 29, they built the building 31, and when they finally built 33; that was a building that was 33 acres; the area was 33 acres. You know, that's probably one of the largest buildings in the world. That's out -- still standing out there. They're tearing down K-25. But they didn't tear down 33 and 31, and I guess they won't tear down 29. They're hoping someone will want to come along and use those buildings, but I don't think they ever will do that because they developed a few holes in the roof and they have to have the roof fixed, and that costs the government several million dollars just to re-roof the things.

[1:23:16]

Callan, C.: Talk about K-25 and what you liked about working there and what you disliked about working at K-25.

Kirstowsky, Ed: Well, I -- there wasn't anything I disliked. At that time, each of us had a job, there were a lot of young, energetic people, and you knew what everybody else was doing and they knew what you were doing and you would get together and talk about it and make

suggestions to each other, all the camaraderie. The living conditions in the area weren't necessarily too good, but we got along. I think the nature of the work carried us -- carried us through.

Callan, C.: How did you like working under conditions of a secret facility as far as communicating with your fellow workers or communicating with people in Oak Ridge? What was that like in your lifetime to always be under this secrecy?

Kirstowsky, Ed: Well, there wasn't a great deal to talk to -- people not working there didn't understand what was going on and you couldn't explain it to 'em. People who -- who worked there -- we could talk to each other and discuss classified materials and so forth, but we -- everybody was good natured and knew what the rules were as far as security would go.

[1:25:37]

Callan, C.: Your co-workers, would you say they pulled their own weight as far as everybody contributing to the effort?

Kirstowsky, Ed: I don't get the whole question.

Callan, C.: Okay. Did everyone work hard and pull their own weight, would you say?

Kirstowsky, Ed: Oh. Yes. Yeah, it was -- we were all young and energetic and there wasn't -- wasn't any loafing on the job.

Callan, C.: Let's talk about health now. Okay, he's telling me there's 4 minutes on this tape.

Can you talk about the health facilities at Oak Ridge and was there an emphasis on health and were you ever hurt there at K-25, you know, what kind of testing? Did the company emphasize health at the facility?

[1:26:35]

Kirstowsky, Ed: Housing facilities?

Callan, C.: Health and safety? Was that emphasized?

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Kirstowsky, Ed:

Oh. Yeah, pretty much. The problems would be catastrophic with regards to the radiation system and we -- we avoided 'em. And the company did, yes. I worked with a group one time that was concerned with approving all the new systems that (indiscernible) put up. If you put the stuff too close together and it was large or so forth, you're -- you're in trouble. So, they didn't know -- if you get too much uranium in one spot, it will automatically explode. I don't think this is any secret, but how -- what size -- what is a safe size that the engineers can work with and so forth. This all had to be developed. Nobody knew that at the start of the thing. So it was -- there were a lot of basic things that were like that that had to be worked out.

[1:28:48]

Callan, C.:

I guess we 'oughta change tape. What do you think? We've got one minute? Let's go. Let's change tape.

[End tape 1, begin tape 2]

[1:54:59]

[crew talk]

Callan, C.:

Okay, we're ready to start again. We're going to start specifically -- and you talked a bit about this, but I'm going to go back over this -- the Manhattan period from '43 to '46. And could you talk a bit about recalling back to the war when you were making the enriched uranium and separating, did you know what it might be used for and do you remember August 6, '45. Do you remember that day specifically and the kinds of reactions.

Kirstowsky, Ed:

Yeah.

Callan, C.:

Talk about the history of the reactions to that day.

[1:56:16]

Kirstowsky, Ed:

We were a group of, like I said, 26 engineers that came in at one time from Chrysler; we were all working for -- in this one division, and everybody was concerned with what we were doing. And

finally, the boss pulled us aside and got us into a room and he told us what it was we were -- what was going on. We were not to tell anybody, but he -- he informed us what was going on. We -- why our job was important with regard to that whole thing. And I'm sure there wasn't anybody in the group that ran home and told their wives and things. Pretty much kept [to] your -- yourself. We knew that we had to observe security 'cause we had a fence around us. (laughing)

Callan, C.: Do you remember August 6, 1945, what you were doing that day when it all happened and the bomb?

Kirstowsky, Ed: The bomb? Yeah. I do, and I remember the second bomb -- mostly, looking back at it, my birthday was August 13th and I wanted the war to end on the 13th and it ended on the 14th (laughter) Japanese surrendered. So I had a pretty good idea about the thing.

[1:58:45]

Callan, C.: Let's go onto the transition period from '45 to '48 is what they call it and how the mission and the projects within K-25 changed is what they called the expansion program. Do you want to talk about what you did during those years?

Kirstowsky, Ed: '45 to '48?

Callan, C.: '45 to '48, right after the --

Kirstowsky, Ed: Yeah.

Callan, C.: -- bomb and what happened then at K-25?

Kirstowsky, Ed: Well, I didn't realize it at the time, but they realize -- they knew that they were going to have to develop a hydrogen bomb. And there was -- we knew that there would be a big demand for uranium in the country for the future power plants, for developing energy in this plant. And this is when they started attaching buildings onto -- well, they -- they started to develop new methods for -- to increase the efficiency of our operation; new pumps and so forth. Went from a centrifugal pump to an axial flow compressor and the new buildings were in the process -- they were being designed.

[2:00:42]

I can remember at that time, the engineering group was very much involved in the designing of these new plants. And those engineers had to work almost 7 days a week and probably 12 hours a day or something like that. And at that time, we didn't have any air conditioning. And we got air conditioning because a transfer was made to the head of the Engineering Department, an engineer was moved from Y-12 over to K-25 to administrate the job and the first thing he did, I guess he was the handicap these fellows were working -- was order air conditioning for the whole building. That's when it started; it just boomed and kept growing. But he was concerned because these fellows were working during the summertime in this hot and you have to lay out your prints and so forth, and you get up and you just sweated, cause you to stick (laughing); the print would stick to your arms. This was how we were able to convince the atomic energy group that we did need air conditioning there.

[2:02:58]

Callan, C.: What are your thoughts about the activities that happened at K-25 that revolutionized the world? How would you say?

Kirstowsky, Ed: The what light of the world?

Callan, C.: Revolutionized the world. What are some of the things you felt that were accomplished at K-25 that were very significant?

Kirstowsky, Ed: Well, we were providing a radioactive material which has been used. All the radioactive -- all the -- medicine -- radioactive medicines that were in use were originated in this area from work that we did here. I mean, that's seemingly a small thing, but it's a rather important thing.

Callan, C.: I think you talked about going through the progression of your jobs at K-25. What would you say was your most challenging assignment as an individual in a group and what was your most significant accomplishment as an individual -- as a group? Can you talk about that?

[2:04:39]

Kirstowsky, Ed: You mean me individually or the group individually?

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Callan, C.: Well, whichever. Some people prefer to talk as a group and some people. What was your most significant accomplishment as an individual?

Kirstowsky, Ed: It doesn't seem like much, (laughing) and it has nothing to do -- it's not related to metal, but we got concerned that the environmentalists were going to get at us because we had a -- our cooling towers were leaking -- leaking water and they had a very high amount of chromium in them. This is the -- to prevent growth of materials, and these are large tanks that are about -- well, they're longer than a football field and about 20 feet high. In the operation of the building, gases were being pushed along and pulled along and the -- in that process, they were being heated. And they had to control the temperature of the operation, so at the same time, they simultaneously were running what we called cooling water through the system, just like you have in your car radiator. Well, these big concrete tanks were leaking and how do you stop the leaks in concrete? And we had -- we -- we didn't have -- most of them, we didn't have trouble with, but some of them were built in the side of the hill and the designers forgot about that and they didn't allow -- allow materials, well, the joint was not designed properly. You have to have an expansion joint for something like that. It's going to expand and contract with the temperature. And the -- those had leaked from the day one, but nobody was concerned about it. (laughing) As time went on, people became more interested in the environment and we knew we were going to have to do something and I was given the assignment of stopping the leaks. And (laughing) I had to come along with new materials and stuff. I patched so that it never -- it stopped the leaking entirely. I think it's one thing that I remember that I did the most.

[2:08:43]

Callan, C.: What was the material you used to stop that leak?

Kirstowsky, Ed: Well --

[2:08:49]

Callan, C.: Or can you not tell?

Ed Kirstowsky

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Kirstowsky, Ed:

We used -- we used some latex, a sheet of latex across -- across -- the joints were about this wide and latex across there and then we cemented the latex to the concrete. But came a little bit bigger than that, we had to worry about stuffing the corners and so on and we had to prevent it from the water pressure pushing the latex down in the groove of it, tearing it up. We -- I devised a method whereby this couldn't happen. It worked. I went up to New York and looked at some work that they had done up there and -- and the -- let's see. It was a baseball stadium at one of the New York ballparks. I think it was Shea Stadium where they had to pour the concrete bleachers, well, they have to allow for expansion. In those, they had used some of the principle to stop the leaks there. When they built that, I just adapted some of the things to that.

Callan, C.:

Let's talk about just generally in management of the workers. Do you remember any conflicts that occurred between the management, the workers, and the union? Do you remember anything like that?

[2:11:05]

Kirstowsky, Ed:

No. And I would've been conscious of that coming from the Detroit area where we had nothing but unions. And it was -- it was good to get down to this area here and not have the unions poking you at everything and say, "Hey, that's right."

Callan, C.:

Now, what sort of roles did women have working at K-25? And how were they treated?

Kirstowsky, Ed:

They hired women in three capacities, I would guess. One was being the laboratory, the chemistry laboratory. And two is secretaries, etc., along that line. And three, originally, they didn't know how to control the system where it would be right, so they had a bunch of women observing what was going on in the system. They had to sit and watch a panel board all day. And let's see. There were about 10 panel boards per building and they had 10 women there, 3 shifts.

[2:13:16]

Callan, C.:

(laughing) That would be not too interesting a job, would it?

Kirstowsky, Ed:

Well, during the war, everybody was gung ho about getting things done and getting it done right.

Ed Kirstowsky

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Callan, C.:

Let's talk about minorities. Did you have any contact with Afro-Americans minorities and how were they treated at the plant?

Kirstowsky, Ed:

Well, back in the early -- in the beginning, the -- black people were hired largely for janitorial work, as I remember. And in our building at the -- at this big U, when I got here there were markings on the -- the bathrooms which indicated that this was white or this was black. And the same thing with the drinking fountains. And it wasn't long before Carbide came along. Oh, within a couple years, Carbide had all those taken down, allowed people to go where they wanted to.

We used to eat together in the cafeterias and the lunchrooms -- they had to have lunchrooms. You can imagine what a job it was feeding this area with all the -- with so many people and everybody wanting to go the same time (indiscernible) and working 24 hours and so forth. They really had a job of feeding.

[2:15:59]

There were 93 dormitories in the city at this -- well, that's the maximum it was. All single people and sometimes (laughing) put 3 people in a room, or so on and so forth. So there were a lot of people. I can remember going -- this deviates from your question (laughing) -- but the barber shops was hard to go to the barber shops. They had a lot of barbers working at once and you'd be lucky if -- if they took -- well, they would cut your hair in about 5 minutes; get you out of the chair and take the next one. (laughter)

And the, I don't know. (laughing) We had churches in the theater and so forth. There was one -- the building I got married in, Chapel on the Hill. You had to (laughing) schedule your -- your wedding and such and such and you'd find out who also's getting married that day. And maybe several of you would split the cost of decorating and things, the flowers and so forth. (laughing)

[2:18:04]

Callan, C.:

It was an assembly line going on.

Kirstowsky, Ed:

Yeah, it was an assembly line.

Ed Kirstowsky

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Callan, C.:

That was actually what I was going to talk about, and I think you went over it, but what it was like for your wife and family at Oak Ridge and what you did during your free time. What was it like living in a secret city and what kinds of fun things did you do?

Kirstowsky, Ed:

Well. Trying to amuse all these people, let's see, we had 3 theaters in the area and we had some buildings that were assigned for -- assigned for libraries and so forth. They promoted industrial leagues of sports competition: basketball, softball, and so forth. And every night, there was a dance on the tennis court. Now, (laughing) it was rather -- rather large, the one that they were using isn't there anymore, but that was the place you went to meet -- meet women and women meet men at this outdoor dance at night.

[2:20:59]

Callan, C.:

We're getting into the final questions.

Kirstowsky, Ed:

I should add that the government came along in about 1947 and gave land for developing a golf course, and we built this golf course out here by ourselves. It's a -- it's a very good course. And. (laughing)

Callan, C.:

What I want you to do in a real succinct manner, if you were writing the end couple of lines of a book and you were to say what is the most important thing that future generations need to remember about K-25, in a real short comment, what would you say that is?

[crew talk]

Okay. What is the most significant thing that future generations must remember about K-25?

Kirstowsky, Ed:

I guess the most remarkable thing is -- was getting all these people together to do this work and not talk about it and keep the secret of the city and the -- and the operation. Nobody knew what we were doing and people weren't curious -- on the outside, there was no curiosity for the thing. And how that they would be able to segregate a part of the country to have this happen is just remarkable. It could never happen in this day when we've got television. (laughing)

[2:24:10]

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Callan, C.:

(laughing) I think you talked about the major accomplishments or did you? If you were to say in a real short answer what was the major accomplishment at K-25, what would you say that is?

Kirstowsky, Ed:

It could never happen again. They had an idea how you separate the uranium isotopes and a few ideas and how to do it, but K-25, for example, they needed a porous screen and it was only developed after quite a while, and the piece they approved was only a couple inches. From that, they went ahead and built this whole big plant up here. Now, minor or any engineering, you start out with an idea and you build this small project and then you build a larger project and so on and so forth. This was not done at K -- K-25. They -- they just assumed it was going to work and they told everybody; everybody was given a specific job to do and they got it collaborated and got the thing done.

[2:24:36]

And this, you know, this was applied over -- also over Y-12. They were doing electromagnetic separating. Now, the one obvious way of separating it would've been with a centrifuge. We've had our milk separated, our cream separated, for years by a centrifuge. You're taking the light off from the heavy, separate the cream. But it was felt at that time that that wasn't far enough advanced, that there was just too much to do, so they put all their money into the thing, all their hopes into the thing.

The government assigned an engineer to handle the thing and he had just got through building the Pentagon. He was the head -- head man for building the Pentagon in -- in Washington. And he was given authority over the whole project, and this didn't include, just K-25, I mean Oak Ridge. Was all west of here and so forth.

Callan, C.:

Well, I think we're finished unless -- we've got what? 30 seconds?

[crew talk]

Maybe 30 seconds. Is there any final comments? Pretty short amount of time, otherwise I think we're finished.

[End of Interview]