

**PROFILES OF SWE PIONEERS**

**ORAL HISTORY PROJECT**

**Margaret Kipilo Interview**

April 11, 2003

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## **Margaret Kipilo**

Margaret Haden Kipilo began her engineering career during World War II, after graduating from Pennsylvania State College. She worked first at Westinghouse Electric Corporation as an assistant engineer in systems studies, and later at Pennsylvania Electric Company and as a substitute teacher. Kipilo was an early member and Fellow of the Society of Women Engineers and was active in IEEE. Kipilo passed away in 2013.

In her 2003 Profiles of SWE Pioneers Oral History Project interview, Kipilo discussed her decision to pursue electrical engineering; her work experience at Westinghouse Electric and Pennsylvania Electric; her experience substitute teaching; and her involvement in SWE.

- July 2016

INTERVIEW WITH MARGARET KIPILO, APRIL 11, 2003

LAUREN KATA: Good morning. It is Friday, April 11th, 2003. This is an interview with Margaret Haden Kipilo, for the Society of Women Engineers Oral History Project. The interviewer is Lauren Kata, for the Society of Women Engineers.

Hello.

MARGARET KIPILO: Hello.

LK: Thank you for joining us.

MK: It's nice to be here.

LK: Can you begin by describing your family background, please?

MK: I'm from a family of four girls; I'm the youngest of four girls. And none of my sisters ever got to college, so I did not expect to either. And then my sister Betty, who was just a year older than me, encouraged my parents to send me to school. And we went over different careers, different things she thought we'd like to do, and there were just so many things I didn't really want to spend my life doing, and we ended up engineering was the only thing left. So Penn State [Pennsylvania State University] was the only school my parents could afford to send me to, so I applied to Penn State. And they sent me a little leaflet describing the different engineering fields, and I picked electrical. And I've not been sorry about that.

LK: Did you have experiences with technology when you were a child?

MK: No. Neither of my parents went to college. Mother finished high school, but Dad didn't even go that far, because his father was injured, and he being the oldest boy, he had to help make a living for the family. And Mother always wanted us to go to college, but my dad thought college ruined people. He didn't really want you to go.

And my mother wasn't really happy when I chose engineering, but they didn't discourage me. I thought that was a wonderful thing, they didn't discourage me. They let me do what I wanted to do, both of them. And I think my dad, in the end, was really proud when I finished.

LK: What is your date of birth?

MK: You don't ask those kind of questions. (Laughs)

LK: For the historical record, we can move on from that.

MK: Okay.

LK: But you were born in Pennsylvania.

MK: Yes, I was. I was born in Ebensburg, Pennsylvania.

LK: And is that the town that you grew up in?

MK: Yes, it is, yes.

LK: And what was your childhood like?

MK: Well, I think I had a very normal childhood. I played

with dolls like other people do. I learned to knit and sew and do things most girls did, and I went to school. And Mother insisted that we all take the academic course, because she had hopes that we'd go to college. I was the first one to get there and graduate.

LK: Did you attend an elementary school in Ebensburg?

MK: Yes. Ebensburg. I had grade school and high school there, and I went to -- we did not have kindergarten. I didn't go to kindergarten. I went to first grade to eighth grade in grade school, and then the four years in high school in high school.

LK: Okay. Do you remember your favorite courses in school when you were growing up?

MK: Well, one thing I will say is the further you go in school, the more interesting the classes become. And I don't remember particularly having any major interest in grade school, but in high school I did like the math classes. And I liked physics. I found physics hard, but I really enjoyed it.

LK: Were there any teachers when you were in school, in high school, before you went to college, that you remember having an impact on your life at all?

MK: I can remember the math teacher. He was a teacher that most people didn't like. (Laughs)

LK: Really?

MK: He was an excellent math teacher, but he had pets, and mostly negative pets. He would pick on the kids -- very few people he liked. I'm one. There's only two that I ever knew that he really liked in school. There was myself and there was a boy that was a couple years ahead of me that he really liked. But he picked on people and he scared them to death. (Laughs) But I got along with him very well, of course. I had him all four years for math in high school.

LK: Did he know of your interest to go to college?

MK: No. I never remember saying anything. I don't know that any of my teachers ever said anything plus or minus. Of course, going to college was a last minute decision. It wasn't planned way ahead, so, you know, it wasn't discussed much.

LK: You mentioned your sister Betty was influential in convincing your parents to--

MK: Uh-huh.

LK: Well, how did your other sisters feel about the fact that you wanted to go to college and pursue engineering?

MK: I don't remember them saying anything about it one way or the other. Betty really pushed. And after I was in school, then she did get to school. She did finally get a degree. She took elementary education. She said "I was an EE, too."

(Laughter)

LK: And when you were narrowing down possible careers, do you remember why engineering -- I mean, you said it was really the only choice. But can you--

MK: It was more, what was left. I didn't want to do -- I didn't want to be a nurse. I didn't want to be a teacher, and you know, on down. I didn't want to do those things. And that was the only thing that was left.

LK: Okay.

MK: And I wasn't really familiar a lot with engineering, because my parents were not college people, and you know, I just thought I'd like it.

LK: Did you know any engineers at that time?

MK: Well, yes, I had an uncle that was an electrical engineer, but I wasn't that close to him. We never discussed it.

LK: And so you started at Penn State?

MK: Uh-huh. I started that first accelerated program. It was during the Second World War. They wanted people to get through, so they did three terms a year instead of two. And I did that, I just went straight through. I didn't take any terms off.

LK: What campus was this?

MK: Main campus. I think it was the only choice we had in those days, anyway.

LK: Oh, okay. And do you remember how many women were going

into the accelerated program at the time?

MK: I don't know how many women were going in. I know that there were 120 electricals, and I was the only girl. But there were two other girls taking engineering. One was taking industrial engineering and one was taking mechanical engineering. But we were never in any classes together, never.

LK: What was that experience like?

MK: Well, I probably was the only one that was really surprised to find I was the only girl in my classes. I never thought I would be the only one. It really surprised me. But the boys I went to school with were a very nice bunch of boys. They were very nice with me.

LK: Did you have any professors who influenced you while you were going through that program, or instructors?

MK: Well, I think the teachers were all very nice, but I don't know how much they -- toward the end, the classes were so small that we had to get together and decide what we were taking and then talk a teacher into teaching it, because the classes were very small. Most of the -- of that 120, only two of us graduated. All the other guys were either drafted or they enlisted. And the one guy that was left was from Venezuela, and they couldn't draft him. They told him if he flunked any courses, he had so many hours to get out of the country, and if he didn't get out, they

were going to draft him. But he did pass.

LK: Wow.

MK: I said that one term -- they were anxious to get us through school, because they needed engineers. And one year we even went on Thanksgiving Day and on New Year's Day. We did that one term.

LK: That's how serious they were.

MK: That's how serious they were getting us through, yes. They wanted us to get through.

LK: And how did your parents feel about that, the intensity of the accelerated program?

MK: I don't think they thought -- whatever I wanted to do, they were -- they didn't discourage me. They just let me do what I wanted to do.

LK: So can you talk about some of the courses that were required to receive the--

MK: There was only one course that I couldn't actually measure up to. We had to take forging, foundry and machine shop.

And when we had to make the molds for pouring steel, you have to turn those molds over. And they were so heavy I couldn't do that.

I dropped it every time. And they didn't hold that against me, that was --

And one other course I did not take that was more or less

required -- I took something else -- they had a powerhouse course that you had to man the powerhouse twenty-four hours. And I think they were glad when I decided not to do that, because I don't know what they would have done with a woman by herself in that situation. It just saved them a lot of problems. I didn't do that.

LK: Did they express that to you or--

MK: No, but I know that's how they felt.

LK: What about some of your favorite courses? Do you remember courses in the program that you felt like you did really well or you enjoyed?

MK: I enjoyed the electrical engineering program, I really did. I found my worst -- my hardest course was thermodynamics. That was in the mechanical department. We had to take three terms of it, and I skimmed through each one.

(Laughter)

MK: And I know the teacher I had the third year offered to help me. That's probably one mistake I made, I didn't know -- I didn't feel I was smart enough to even ask an intelligent question, so I didn't take him up on it, and I should have. I know now what I should have said to him. To me there was no relationship between the theory and the problems. And of course, all the tests are problems.

LK: Right.

MK: And he gave a test on theory one time, and I made the highest mark in the room. But I could see no connection between the theory -- and I still don't. So whatever, anyway, I passed it. (Laughter)

LK: Well, that was an accomplishment. And so you graduated with a B.S. in electrical engineering in February of 1945.

MK: Uh-huh.

LK: What was the atmosphere like during that time, in terms of what you were going to do after you received your degree?

MK: Well, at that time, the war was still on, and they were interested in engineers. And I did have several offers for jobs. I understand that the women later didn't have that, but when I graduated, they needed us. And I accepted a job with Hamilton Standard Propellers in Hartford, Connecticut. And we did deicing of the propeller blades. I enjoyed the work very much, but I couldn't find a place to stay up there, so I finally quit and came home.

LK: Where did you stay while you were working?

MK: Well, I stayed -- at that time, women didn't go out and rent apartments, you stayed in someone's home.

LK: Right.

MK: And I stayed in this lady's house. And she had a large

house. And most of her girls worked for Pratt & Whitney, which made the motors for Hamilton Standard and Pratt & Whitney, and there was another one. They were all under the same thing. And I just quit and came home.

And then I got the job for Westinghouse Electric Corporation in East Pittsburgh, Pennsylvania. Now, they had a DC board and an AC board, which they set up the electrical system of the companies. And they could measure what was going on just for normal distribution, or if there was a fault. And then this was used in building new construction, and also in relay and circuit breaker application. And the relay and circuit breaker application is the kind of work I did there. And I stayed there about three years.

And then I came to Penelec [Pennsylvania Electric Company] in Johnstown. I could stay at home. And I did similar work for Penelec. And I worked for them for three years until I got married. And when you got married, you weren't allowed to work. You either worked or got married. And so I left Penelec. And I didn't work again for a number of years. And when my youngest son was in third grade, the teacher said to me, "Why don't you substitute teaching?" She says, "They need teachers so bad." So I did. I applied to do substitute teaching, and I did some in the junior high. And the Teachers Union got upset with people like

me, because we didn't have teacher's credits. And so that ended that job.

And then the next job I had was with Westinghouse Electric in O'Hara Township in Pittsburgh. When Emma Barth retired, she was hired by these people to write the manuals. And she said to me, "We need people. If you'd like to work, why don't you come?" So I applied, and I went down there and worked. I was hired for a short period of time, three months, was it? And I worked there for almost three years. And the reason -- that was the nicest job that I ever had. (Laughs) It was similar to my area. And they weren't making money, so they quit that particular program.

And then after that, I worked for Westinghouse Electric in West Mifflin. They made steel wheels and people movers. And I was hired for work on BART [Bay Area Rapid Transit], which is the system out in San Francisco. And I was hired for six months, and that lasted about three years. And that ended because Westinghouse and a German company went in joint ventureship, and they got rid of all those who weren't actually Westinghouse employees, which I was not. So that ended that one.

LK: Let's take a step back. That's quite an amazing career. Talk about your first experience with Westinghouse, after you came back from Connecticut. What was it like looking for a new job at that time? Do you remember?

MK: I don't remember exactly how I got that job. My dad really did a lot to get me that job. My dad had a garage, and I guess somebody came in that was down there, and he talked to them. But when they hired me, they did not hire me as an engineer. When you first went to a company, you don't know what the titles mean.

LK: Right.

MK: I was hired like one of these girls that took a few engineering courses. And when I found that out, I went in and talked to my boss. And he said to me, "And when are you going to quit if I don't give it to you?"

LK: Wow.

MK: And I said, "Well, I didn't figure that I would quit at all." I said, "I figured you didn't realize, and that you would rectify the mistake." And they did, but they didn't make it retroactive, which I felt they should.

LK: Right. Wow. And then subsequent hirings, you were hired as an engineer?

MK: Yes, yes.

LK: Great. And so while you were at Westinghouse, that's when you met your husband?

MK: No, no. I met him after I was working for Penelec. I met him at engineering meetings. He worked for Bethlehem Steel in

Johnstown. And I met him at engineering meetings.

LK: Professional engineering meetings?

MK: Yes. Well, it wasn't a PE meeting; it was an Electrical Engineering Society.

LK: The local meetings?

MK: Uh-huh.

LK: And he has an engineering background?

MK: Yes, he's an electrical engineer, too. He was doing similar work, only for Bethlehem. And I taught him some things about symmetrical components because he'd never had that, and he really needed it in what he was doing. And we could discuss work, you know. You can't always do that, but we could discuss different things that came up at his work. That made it nice.

(Laughter)

LK: I am kind of jumping around a little bit.

MK: That's all right.

LK: Can you talk about how you and your husband balanced your professional working life with your family life?

MK: Well, I don't think that really applies a lot to me, because I wasn't working when my children were little. When I started to work, teach school, of course, I was gone while the kids were in school, so that was different. But when I took these engineering jobs, my kids had graduated from high school, except

John. He was still in high school. And I don't think there was a lot of juggling to do.

LK: Right, okay. And so what year did you join Westinghouse in O'Hara Township? Do you remember?

MK: I don't remember exactly, but it was probably the end of the 1970s, because I was working there when my husband passed, and he passed in 1980. So it was in that time period that I worked there.

LK: And so it was really during your first job at Westinghouse that you learned about the Society of Women Engineers?

MK: No. I didn't learn about it until I was working for Penelec. When I -- how the organization started in Pittsburgh: Sandy Miller is from the Philadelphia area, and she married a man from the Pittsburgh area and came to Pittsburgh. And she wanted to start a group in Pittsburgh, so she had a meeting. I was not informed about it. I didn't know about it. I know that Emma Barth was there, I know Mardell Boyles was there, and I know Sandy Miller was there.

LK: Emma Barth and Mardell were both women engineers in the Pittsburgh area?

MK: Yes. And Sandy was too, at that time. But anyway, to get back how they found out about me: When I first started

working for Westinghouse in East Pittsburgh, I lived in East Liberty, in the YWCA. And I wasn't allowed to stay there because I made too much money. But I could stay there until I found something else.

And Mardell lived near there, and she used to come in for meals. And somehow, I don't remember exactly how, we got to know each other, but then we roomed together then. We got a room and stayed together. And we stayed together until Westinghouse went on strike. They had a huge strike when I was there. And we gave up the room and both went home.

LK: And at this time, there was no SWE.

MK: No, no. No Society of Women Engineers. I didn't know Emma, I only knew Mardell. And when they had this meeting, Mardell was at it, and she told them about me. And Sandy called me and asked me to serve as section representative for the Pittsburgh Section. She asked me to join, and to do that, and I did. And I thought it was wonderful to learn of some other women engineers, because I'd always been kind of by myself, you know. And people at that time looked at you like you were a weirdo.

(Laughs)

LK: How many women, approximately, were part of that founding group in Pittsburgh?

MK: I think there were about eleven. They weren't all

engineering degrees. Some had associate degrees and things like that.

LK: Was that a major issue?

MK: Not at that time, but it became more involved later.

LK: Right. And I mean, you hinted at it just now, but you remember how it felt to be part of the Society of Women Engineers at that time?

MK: Yes. I really appreciated the Society of Women Engineers. And at the conventions and things, I met Lillian Gilbreth. I think everybody knows who she is. She was a very gracious lady. And I also knew Beatrice Hicks. Well, I knew most of the founding people. I knew Isabelle French, you know, from the word go, practically. And it was nice to know that there were other engineers out there, you know, that we weren't just one or two, that there were a number of us. And it did help me, and I appreciated it.

LK: How were the SWE meetings different from the other engineering professional meetings that you were attending as a young engineer?

MK: I wasn't really efficiently attending either meeting. But in the Society of Women Engineers, they often tried to bring up problems that women would have that the men didn't have. And we also had technical meetings, and they still do, and that's

nice. Okay.

In the Society of Women Engineers at that time, I served as treasurer, and I designed the first form for collecting the dues. I was surprised it hadn't been done before I got there, but it was still pretty new. Of course, it didn't last long. Always, once you have something started, it's so much easier to change and improve it once it's done.

LK: Right, right.

MK: Which is fine. (Laughs)

LK: In the first decade of SWE's existence, as the society was trying to find a place for itself and started discussing its larger purpose, do you remember some of those early discussions, either verbal discussions or things that other members were writing?

MK: Well, at times they thought that we should just be in existence until women got established. But I think there's still a need for the Society of Women Engineers, even today. This has been fine tuned down through the years. And they also -- at first we didn't have men, and now men can join, if they're helpful to women, and different things like this. But it's just like any organization, it's grown, and you expand, and you become more helpful.

LK: Were there any other ways during your career that you

feel SWE impacted you or helped you, other than the opportunity to meet with other women like you?

MK: I don't feel they did much for me for jobs, although they do have job fairs and these kinds of things. But they didn't have them in the beginning, and when they got to having them, I didn't need them. So no, I don't feel they did a lot. But certainly I've made a lot of nice friends and met a lot of wonderful women. And I think that's very worthwhile.

LK: So what was it like returning to the workforce after you weren't raising your young children anymore?

MK: Well, I guess the first job I had in engineering after they grew up was the one in O'Hara Township.

LK: Right, okay.

MK: And I had no problem going back there. I will say they had respect for me there, and I was liked, and I enjoyed working there very much.

LK: And you were originally hired for a short period of time, and that position was extended.

MK: Uh-huh.

LK: And you said you were hired on a contract, as a contractor or--

MK: I was hired over the telephone, which really surprised me at the time.

(Laughter)

MK: Sight unseen.

LK: Can you talk about that?

MK: He just said he'd hire me. And nothing was in writing with me, nothing. Nothing was in writing. I just went down -- Emma was going there, and I didn't know where it was, so I went into her house and followed her out to find out where I was going. And that's the first I met them. They didn't see me before that either.

LK: Were you surprised the position was extended past what you had originally discussed?

MK: No, they needed us.

(Laughter)

MK: They needed us. Emma stayed until she felt it wasn't financially worthwhile for her, because she was already retired, and the way Social Security is set up, you can't make money. She didn't stay -- I guess she stayed about half of the time, and then I stayed on. But there were other girls doing this, but I'm the only one that had an engineering background. The others could only correct English. (Laughs).

LK: But there were other men with an engineering background working on these.

MK: Oh, yes. Most of them had master's degrees there.

LK: Wow.

MK: They were a nice group of men. I enjoyed working there.

LK: So back when you first started working -- or interacting with the Society of Women Engineers, you were at Penelec at the time--

MK: Yes.

LK: And how did the company feel about your participation in SWE?

MK: Well, they did not pay for any of our trips. Today the companies pay for people to go. But they did not pay for me to go to any -- they felt that they did their part by allowing me to go. And at that time, you weren't allowed to go to any professional meetings without the approval of the company -- even the men weren't. So they felt that was their part. And mostly we met over weekends, so there wasn't a lot that they had to let me go for, but sometimes they did, and they did let me go. They were satisfied with me being there.

LK: And when you attended these conventions, what were some of the major issues that were addressed at that time?

MK: Oh, I don't remember. Each conference -- each convention had a different subject.

LK: Okay. Technical subject?

MK: I don't remember exactly.

LK: Let me rephrase the question. I mean, what were some of the issues that women shared in terms of their concerns on the job? Do you remember?

MK: Well, women have had that family conflict since they've been allowed to work after they were married. And that's been handled at many conventions. And some people have had trouble with harassment. I never had any harassment, either at work or at school, but some women have. And they've brought that up at the conventions. And a lot of women still aren't paid comparable to men when they're doing the same thing. Those kinds of things were discussed.

LK: And was there ever any discussion about the role SWE should play in addressing those?

MK: Well, that's what we were for, to help the women. That was one of our purposes, to help women handle these kinds of problems.

LK: Through workshops or--

MK: They had workshops, and they also had speakers, and whatever.

LK: Right.

MK: And you met people, and you could talk to other people that have had problems. That's one of the nicest things. You can -- "Well, this is how I experienced it," you know, "And what I did

when that happened." That's one of the nice things about knowing other women engineers.

LK: Did you have any mentors at any time along--

MK: I don't feel I had any mentors at any time. I was pretty much on my own. (Laughs)

LK: Were you ever somebody else's mentor at any time?

MK: No. I haven't been theirs either.

LK: Why did -- I don't mean for this to sound repetitive -- you why did you decide to remain a member of the Society of Women Engineers, even though, as you said, you weren't really experiencing any kind of problems personally at work?

MK: I felt that the Society of Women Engineers was a very good organization. I felt that it was doing a lot of good. And even though I wasn't working when we first got married, I did want to stay a member. And we dropped -- as you know, that's a financial problem, and we just didn't drop the Society of Women Engineers. That's just one of the things we didn't drop. My husband was satisfied with that too.

LK: And so he was supportive of--

MK: Yes.

LK: -- of the mission and--

MK: He was supportive.

LK: I'm sorry. What was his name, again?

MK: Joseph.

LK: Joseph Kipilo?

MK: Yes.

LK: So that's interesting. So there were organizations that you didn't stick with.

MK: That's right.

LK: As your children were growing up, were they involved in SWE at any time or--

MK: No.

LK: -- exposed to any of that -- okay.

MK: They sometimes had picnics that we took them to, but no, they weren't involved.

LK: Do you remember how they felt when you went back to work?

MK: Oh, my one daughter was very unhappy because I was teaching her class.

(Laughter)

MK: She didn't like that. In fact, she cut the class.

LK: Oh, how funny.

MK: She heard I was there, so she cut the class. (Laughs)

LK: What about when you started doing your engineering work again?

MK: That was all right. It was the thing that got us back

into square one financially. Because at that time inflation was very high, and Joe's pay wasn't kept up with inflation. So when I started to work, it finally got us back to square one financially.

LK: And he remained at Bethlehem?

MK: At Bethlehem.

LK: Bethlehem Steel? Okay. Do you feel that you were affected at all at this time period by the outside women's movement that was going on?

MK: No, I wasn't affected by that.

LK: Do you feel that as a working woman, you contributed?

MK: Well, I feel my contribution was: I went to work, and I did a reasonable job for them. And I feel they wouldn't hesitate to hire another woman engineer. And I know one time when I was looking for a job, I went down to the unemployment agency. I very rarely did those kinds of things. But the man who was interviewing me was very pleased to find I was an electrical engineer, because he said Penelec was looking for a woman engineer. But they didn't want me because I was too old at that time for them. (Laughs)

LK: Oh, really?

MK: They wanted a young graduate. They wanted a young kid right out of school.

LK: Was this before any kind of--

MK: This was after --

LK: -- equal opportunity law or--

MK: Oh, they don't say these things that bluntly.

LK: Okay.

(Laughter)

LK: I'm a little bit naive.

MK: But they wanted a girl right out of school. And that showed me that they weren't unhappy with what I had done, or they wouldn't be even looking for a woman engineer, although they didn't want me back. After you get a certain age, they don't want you. And I did not keep current with what was going on. That's why I could do the technical writing; you didn't have to be current.

LK: What did you find most enjoyable about your work as an engineer?

MK: Most of the work I did was math oriented, and that was what I was good at. And I did like it, and I liked the people I worked with most of the places I worked. I got along with everybody. Yes, I'm glad I took engineering, and I've been satisfied with that.

LK: What do you think the image of just an engineer is in our society?

MK: Oh, I think that they think you go out and do all these

physical things. And lots of them do, but a lot of them don't.

And I think that's one of the things that hinders girls from taking engineering. They think that they have to go out and be up on a pole and connect up motors and all this kind of stuff, whereas, that isn't what they're doing. They tell other people to do those things.

(Laughter)

LK: Do you feel that you were exposed to a variety of engineering backgrounds and disciplines through SWE?

MK: Oh, yes. The women engineers were all different kinds. And that is a really nice thing, too. You're not limited. And one thing it makes it hard for them, though, to do meetings, because everybody isn't interested in electrical things, everybody's not interested in mechanical. So they try to get things that they all can relate to.

LK: Is there any other engineering organization that has that issue?

MK: Oh, I'm sure the PEs have it, the Professional Engineers.

LK: Right. Can you talk about going toward your PE license? First of all, why did you decide that that was important?

MK: Because I was a woman. I felt I needed it more than a man. I felt having a PE on your name would help you get a job

more than anything.

LK: What time period was this, again?

MK: When I first started to work for Penelec, I got enough years in -- they'd just started it at about that time. That must have been the end of probably around '50, somewhere in the 1950s.

They just started PE in Pennsylvania. And I wasn't old enough to get in on the grandfather clause. If you had enough years in, you could get your license without taking a test or anything. I didn't have enough years. I got enough years when I was working for Penelec, and I applied. And they sent me notice that the test was going to be given. I had less than a week's notice. But I thought, "What the heck, I'll go take it anyway."

LK: Wow.

MK: So I went and took it, but I didn't pass it the first time. At that time they didn't have these refresher courses to help you--

LK: Oh, right.

MK: -- which they do now. But I did pass it, and I am a Professional Engineer. And for a while, I was the only woman in Pennsylvania who was. There was a woman who got her license ahead of me, but she left the state and didn't keep her license here. But that was just for a short time, because other women engineers did take the PE and pass.

LK: Wow. And how was that received by the--

MK: I don't think they knew it. (Laughs) They just told me at the PE -- you know, I was told that.

LK: What did that mean to you?

MK: I thought that was nice, that I was -- and Joe got his license after I got mine. He got his license too.

LK: That's great. So how would you say being a woman has affected your experience as an engineer? That's come up a little bit in some of the other questions, but--

MK: Well, I think everyone's experience is individual, whether you're a man or a woman. And when I first started as an engineer, especially guys, they looked at you like you were strange that you would do something like that. But after a while, they accept you, and it goes smooth.

LK: Do you think the profession has changed for women since you entered?

MK: Oh, yes. I think it's a lot easier for a woman engineer today than it was in the beginning. Some of the women had a rough experience getting jobs and everything. And from things I've read, most of the first ones got their jobs because of who they married or their father or their brother. You know, you had to have some in.

LK: Did you know anyone personally who had that experience?

MK: No.

LK: Well, I read it. I've read their experiences.

LK: Okay.

MK: But I didn't have that.

LK: Why do you think it's changed?

MK: Because there's more women engineers, and they're good. They're doing their job right. You know, if they were just fiddling around, it wouldn't happen. But they're sincere, and that's what makes the difference.

LK: But you still feel there is a need for a Society of Women Engineers today?

MK: Yes, I do. Yes, I still do. Anyway, I became a life member. This is the life pin. I became a life member when they first offered it. And I didn't do it for any fabulous reasons, but for financial reasons. I felt I could afford it then. If I applied today, I don't think I could afford to do it, they've raised the price so much.

LK: Oh, right.

MK: But when they first offered it, it was reasonable for me, and I did it. And I'm glad I did it.

LK: Why are you glad that you became a life member?

MK: Well, because I believe in the organization.

LK: Are you a life member of any other organization?

MK: No, I don't think I am.

LK: When you were involved in the last Pittsburgh convention, there was a movement to honor SWE pioneers, and you were involved that, correct?

MK: Yes. That was the first convention that they did this. And when I first was assigned this task, I thought it would be nice to honor the Pittsburgh women, especially. I couldn't find most of them. Of course, I knew some had passed on, but those who I didn't know passed on, I couldn't find them. I didn't know where they were.

LK: Wow. So what were some of their names? Do you remember?

MK: I never could find Mardell Boyles. I don't know what happened to her. Sandy had passed on. Emma was there. She was still living. She died right after this. She was supposed to come, but she physically had a turn for the negative, and she couldn't come. She passed shortly after the convention.

But when we couldn't find these people, we picked some. And you can't pick them all. And I asked how many we were to invite, you know, so I'd know how many we could -- and we invited all of them. Well, of course, all of them don't come. And I think they did it at the next convention, and then I think it was dropped. And I think it was dropped because you couldn't get enough. And I

think doing these tapes is the alternative. And it really, to me, is a better approach. Because they'll have these now, forever.

LK: But you do feel it's important to recognize the early contributions?

MK: Yes, I do. People just don't get to know them any other way. This way they can find out what they had to deal with, and get to know them a little bit.

LK: What do you consider to be your most important contribution to the engineering profession?

MK: Well, as I said before, I think I did a reasonable job where I worked, everywhere. And I think that's the bottom line. You have to come across with daily things. You don't just all at once become at the top.

LK: Right, right. And is there one project that you remember working on that really impacted you?

MK: No. I worked on different things. And when I was at O'Hara Township [correction: West Mifflin], I was hired just to work on things for San Francisco, but I worked on New York and Washington and Las Vegas, and other things, which was fine, you know.

LK: Do you have any thoughts about how the field of electrical engineering has changed?

MK: Oh, it's changed a lot. It has changed tremendously.

One of, I guess, my favorite things was that I got into power, because power didn't change as much as the others did. When I started working for Westinghouse, I really hadn't taken courses in this at all. I had to go to night school to learn what I was doing. And I went to Pitt [University of Pittsburgh]. At that time, Westinghouse helped finance it, and you didn't have to pay the full price.

LK: Wow.

MK: And I thought you were foolish not to go, so I did the whole time I worked for Westinghouse, I went to night school in Pitt, and took different courses. I have at least half or better for my master's degree, but that's gone down the drain now, because you have to do it all within two years.

LK: And at this time, your children were grown?

MK: Well, I wasn't married when I worked for Westinghouse.

LK: Oh, you're talking about the first time, okay.

MK: I wasn't married yet.

LK: I'm sorry, that was my mistake.

MK: No children. (Laughs)

LK: And so you took the courses to--

MK: And after I came to Penelec, I wasn't driving back to Pittsburgh in the night to take the course -- I didn't care that much. It wasn't that important to me.

LK: Right, right.

MK: And the roads get bad. The road coming to Pittsburgh wasn't that great.

LK: And so you were saying that you enrolled in these evening courses to help you become more familiar with power. And you were talking about enjoying that aspect of the field.

MK: Yes, I did.

LK: And that continued throughout your career?

MK: Yes I did. But I didn't take any other engineering courses after I came to Penelec. My husband and I took the fallout course when it was given. After the world war, they were so concerned about radiation, and we took the fallout course together. And then I did take a computer course at Indiana State [Indiana University], at Indiana, Pennsylvania. I took a computer course.

LK: What was the fallout course? I'm sorry, I'm not familiar with that.

MK: After World War II, they were afraid that we might get bombed, and the radiation from those bombs was very lethal, so they figured things to do to protect yourself. And we took this course.

LK: It was specific to engineers?

MK: Yes.

LK: Okay. Engineer, from the perspective of solving the fallout problem?

MK: To protect yourself and others.

LK: Interesting. And how long did that last?

MK: Oh, I don't remember. It was a short course. It wasn't a long thing.

LK: Oh, okay. What was it like attending courses with your husband?

MK: It was all right. I was the only girl there, too.

LK: Wow. Do you remember what it was like in the early years of SWE with other husband/wife engineer teams? Did you come across that in SWE a lot?

MK: Sandy's husband was a lawyer. Emma never got married. I don't think in the Pittsburgh section they had any other husband/wives that were engineers.

LK: Did you ever interact with anyone on the national level in that--

MK: I don't remember talking about that. Probably, but I don't --

LK: So it wasn't really an issue.

MK: It wasn't really an issue. (Laughs) No problem.

LK: Except that -- no, I wasn't thinking of it as a problem. You had mentioned that it was nice to be able to discuss work.

MK: Well, it is.

LK: You mentioned that the Society of Women Engineers conventions, when you were a member, the national meetings were a lot smaller than they are today. Can you talk about that little bit?

MK: Well, when we first went, we numbered them in the hundreds, maybe we had a couple hundred there. And now they're in the thousands. And when they first had them, it was a financial chore to have them, but I don't think they are anymore. They're more: The business will help you, industries will help you.

LK: Right, right.

MK: Whereas we didn't have any of that support in the beginning. And the conventions are big now. It's really a surprise, and it's a pleasant surprise. Now we have so many more scholarships. I was on the scholarship committee one year. At that time we had a scholarship to give. And we had so many that really deserved it, but we just had to pick one. Well, now we have many scholarships, and I'm so grateful that we have a lot more, because there are a lot of deserving people there.

LK: So you had five children.

MK: Yes. I had five children, and three are engineers. My one girl took -- she has a B.S. in electrical engineering. And another girl, Meg, has an associate degree in electrical

engineering. My son John has a B. S. degree in petroleum engineering.

LK: And how do you feel about your children being engineers?

MK: Oh, I think it's nice. No, they didn't take it because of me.

(Laughter)

LK: Or your husband?

MK: No, they didn't take it because of us. In fact, Ann (phonetic) said she was not going to take electrical engineering, she was not going to go to Penn State, and she was not going to go to Pitt. My husband went to Pitt. But she did go to Penn State. My husband was very unhappy with me when she was graduating from high school. I took her down to Lehigh [University]. That's a very good engineering school in Pennsylvania. We knew we couldn't afford to send her there, but we took her there anyway to look at the school. Well, they didn't want her. She was a girl. They weren't nice to her at all.

LK: Even still.

MK: Even then when she went. So when we came back, we drove past Penn State, and I said, "Why don't we just go in here and look?" She didn't want to take engineering, she wanted to go in math. And I knew she didn't want to teach. I said, "You're better off to go in something that uses the math than to go into

math." So we went in, and at Penn State they were so nice to her.

And in the math department they told her that if she had any idea she was going to take engineering, she should go down and start in engineering and transfer that direction rather than the other way.

So we went down, and then she decided to go to Penn State. And she started out in architectural engineering, and changed to electrical later. But they were so nice to her, and I guess after Lehigh was the way they were, it made a lot of impression.

LK: While she was in school, did she ever talk with you about what she was learning, and maybe how you worked with it on the job?

MK: No.

LK: Were there any kind of--

MK: No. She didn't talk about that.

LK: Okay. It's so interesting that you're both electrical engineers. Penn State had a meeting for its pioneers.

MK: Penn State had a meeting several years ago. And I thought it was interesting that if you got your degree before 1970, you were considered a pioneer, which I thought was pretty recent for... I did go to the meeting, and there were a lot of people there. And after the meeting was over, these three girls came to me, and they said I was the only one there that was electrical.

LK: Wow.

MK: I hadn't really paid any attention to what -- I listened to everybody's degree, but I didn't think about that. Then she says I was the only one there that was electrical, and that was surprising. And then talking with the women afterwards, I found out that most of the women that graduated at the time period I did, didn't go to work, they just got married. But I wanted to work. I wanted to get some work experience.

LK: And you were the first American--

MK: The first American girl to graduate from Penn State in electrical. They had other engineers in other areas, but in electrical, I was the first one. The first woman was a Chinese woman.

LK: And what does it mean to you to be the first?

MK: Well, at the time it didn't mean anything.

(Laughter)

MK: But it's nice to know that you were the first. And the teachers didn't expect me to graduate either. Other women had started, and they quit, mostly because the guys teased them so much. But I didn't have that problem. I don't think I'd have stopped anyway. (Laughs) But Penn State is a nice school. I had a nice experience there.

LK: Do you have any final thoughts for young women today?

MK: Well, I think that the women that are coming have to realize that we're not all going to be president of SWE, or presidents of our company or something, but the important thing what you do daily. Daily you should make every effort to do the best you can, and that's all that's required. And if you do that, you'll succeed, you'll be fine.

LK: And is there anything else you'd like to reflect on about your life as an engineer?

MK: Well, I'm glad I took engineering. It certainly didn't work out like I expected it to, but whose life does? But I've been very satisfied with my engineering career.

LK: Okay. Well, thank you.

MK: And thank you for having me.

LK: And we'll stop now.

END OF VIDEOTAPE