CHEMICAL HERITAGE FOUNDATION

KEITH R. MCKENNON

Transcript of an Interview
Conducted by

James J. Bohning

in

Scottsdale, Arizona

on

30 March 1995

(With Subsequent Corrections and Additions)

ACKNOWLEDGEMENT

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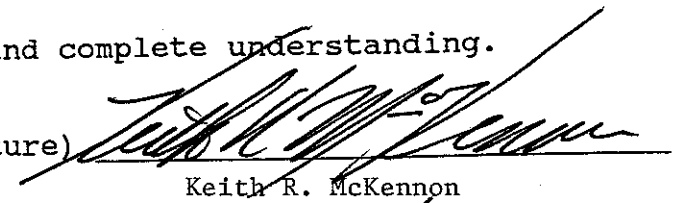
(Signature) 

Keith R. McKennon

(Date) 8/16/95

(Revised 17 March 1993)

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KEITH R. McKENNON

1933 Born in Condon, Oregon on 25 December

## Education

1955 B.S., agricultural chemistry, Oregon State University

## Professional Experience

The Dow Chemical Company

1955-1956 Research Chemist, Special Assignments Program1956-1961 Research Chemist, Pusher Project, Western Division

Shell Chemical Company (San Francisco)

1961-1962 Salesman

The Dow Chemical Company

1962-1967 Sales and Development, Pusher Project
1967-1968 Field Sales Manager, Secondary Oil Recovery Department (Houston)
1968-1969 R&D Director, Secondary Oil Recovery Department (Walnut Creek)
1969- Development Manager, Process Chemicals (Midland)
1971 Business Manager, Environmental Control Systems
1971-1974 Business Manager, Highway Products
1974-1976 Business Manager, Construction Materials/Styrofoam
1976-1978 Director of Government Relations and Public Issues, Plastics Department
1978 Director of Public Affairs, Dow USA
1978-1985 Director of Public Affairs, Dow
1978-1990 Member, Management Committee, Dow USA
1980-1983 Vice President, Dow
1983-1992 Member, Board of Directors, Dow
1983 Group Vice President, Product Department Management, Dow USA
1983-1987 Group Vice President, Dow
1985-1987 Director, Research and Development, Dow
1987-1990 President, Dow USA
1990-1992 Executive Vice President for Technology

Dow Corning Corporation

1992-1993 Chairman and Chief Executive Officer

## Honors

| | |
|---|---|
| 1991 | Paul Harris Fellow, Rotary Clubs |
| 1992 | Distinguished Citizen Award, Boy Scouts of America |
| 1994 | Chemical Industry Medal, Society of Chemical Industry |

## ABSTRACT

Keith McKennon begins this interview by discussing the origins of his interest in research and chemistry and the impact of growing up in Pendleton, Oregon, and attending Oregon State University. He then describes his early career at Dow Chemical Company and his decision to leave Dow for a sales position with Shell Chemical Company. Next, McKennon explains the process development and sales work he undertook upon his return to Dow and the research management strategies he employed as he later moved through Dow's management ranks. In recalling his decision to change career directions and take a position as a Director of Government Relations and Public Issues, McKennon views external influences on the chemical industry and the impact of environmental activism. He examines his relationship with Paul Oreffice, the change from Zoltan Merszei to Oreffice, and his own role on the board of directors. Next, McKennon describes his second major career turn—dealing with public concern about dioxin in Agent Orange, and later, at Dow Corning, with the silicon implant affair. Finally, he ends the interview by reflecting on the chemical industry, its future, and the need for quality research management.


## INTERVIEWER

James J. Bohning, formerly Assistant Director for Oral History at the Chemical Heritage Foundation, holds the B.S., M.S., and Ph.D. degrees in chemistry. He was a member of the chemistry faculty at Wilkes University from 1959 until 1990, where he served as chair of the Chemistry Department for sixteen years and as chair of the Earth and Environmental Sciences Department for three years. He was Chair of the Division of the History of Chemistry of the American Chemical Society in 1986, and has been associated with the development and management of the Foundation's oral history program from 1985 to 1995. He currently writes for the American Chemical Society News Service.

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INTERVIEWER: James J. Bohning

LOCATION: Scottsdale, Arizona

DATE: 30 March 1995

BOHNING: I know you were born in Condon, Oregon, on Christmas Day, 1933, and that you subsequently received a B.S. degree in agricultural chemistry from Oregon State [OSU]. I understand that your interest in agriculture comes from your family background, but what about your interest in chemistry? Where did that develop?

McKENNON: I suppose with a high school chemistry teacher named Warren Studer, who was a graduate of St. Olaf College in Minnesota. When I was a junior in high school, Studer introduced me to the wonders and mysteries of chemistry and I got fairly fascinated with that. I was not a good student in the sense that I didn't work very hard, but once I got curious about something I'd get into it fairly deeply, and chemistry seemed easy and fun for me.

BOHNING: Where was the high school located?

McKENNON: That's Pendleton, Oregon, Pendleton High School. One other thing that might be interesting as a matter of historical record. You mentioned I was born in Condon. I left there, by the way, at quite an early age, four years or so. Condon is a city; on a really big day when it's festival time it might be fifty or a hundred people, but at normal times it might be thirty or forty.

I discovered that one of the kids who went to school there—and I'm fuzzy now on exactly what years but I think grade school and much of high school—was a guy named Linus Pauling. Here's this little town—we're talking little—in a fairly obscure part of the United States where a man of that caliber went to school. Who knows? Maybe that inspired me some. He was the class speaker when he graduated from Oregon State in 1922, and I'm the possessor of a copy of that speech to this day. That was a lot of years before I was in Condon or before I was a junior in high school, probably twenty-five or thirty years. Maybe that had something to do with it, I don't know, but Mr. Studer certainly did.

BOHNING: Did you get a lot of laboratory experience in that high school course?

McKENNON: Some laboratory work. My memory is we had the typical chemistry laboratory for the time. We had little sinks, and probably like every other kid in the history of the world, we'd take a little piece of sodium out from under the oil and throw it in water, and all that kind of stuff. It was not all books. We did do some real laboratory stuff.

BOHNING: You went to OSU in 1951, I believe.

McKENNON: Right. You've done your homework well, sir.

BOHNING: I understand both your father and your grandfather graduated from OSU, so it was sort of preordained that this was where you were going to go.

McKENNON: As did my mother.

BOHNING: And your mother, too, which was unusual at that time.

McKENNON: Yes, I think so. It was a struggle for them. My dad learned to value college very much, partly, I think, because it took him so damn long to get through. He had to work a year and go a year and work a year and go a year, and that was right in the Depression. He graduated in 1932, so he was right across the Depression. Yes, it would not have been wise for me to fail to go to college. [laughter] He was pretty emphatic about that.

BOHNING: I'm not sure what constitutes a degree in agricultural chemistry.

McKENNON: I was in the school of agriculture and was taking chemistry. Agricultural chemistry was in the school of chemistry. I wasn't a great student, but in the school of agriculture I was not bad. They were trying to keep kids from leaving agriculture and going off into chemistry, so they developed a curriculum for upper class, junior and senior years, called agricultural technology, which basically was a hundred percent electives for both years. You could take whatever the heck you wanted, and it permitted me to take all the chemistry and stay in the school of agriculture. I didn't much care where I was, I guess, but I had a lot of freedom there and I could take prodigious numbers of courses.

I remember I took nineteen credit hours a term. The degree in agricultural technology is, in fact, what I have, although I say agricultural chemistry. I took all the chemistry and a fair amount more of business-related stuff than you'd get in the chemistry curriculum, but I

didn't have German. The reason I didn't graduate with a B.S. in chemistry was because I ducked the German requirement, which wasn't a requirement in the agricultural technology curriculum. That was the fundamental difference. "Why the heck do I want to do German? We just won that war." [laughter] I suppose that's what I thought. That was, by the way, quite a mistake. If I had anything to do over again if I were starting in, say, high school or further back, I would get a second language. That's my single biggest regret, that I didn't do it.

BOHNING: Were you aware of the Pauling legacy at OSU when you were a student?

McKENNON: I was. Pauling was at Caltech and doing wondrous things. Remember, I was at OSU about the time that [James D.] Watson and [Francis H. C.] Crick did their wondrous magic, and Pauling was heavily into that, as I'm sure you know. So he was a Caltech-er and his mind was occupied with other things than Oregon State. It was only in his later years that he warmed to that and it became a big deal, and it is now quite a big deal. In fact, every February 28 from now on will be Linus Pauling Day in the state of Oregon, just as an example.

BOHNING: Really?

McKENNON: Yes, by proclamation. This year was the first one, and I had the high privilege of having dinner with Sir Francis Crick there to celebrate the event. Crick gave a lecture about Pauling. So that's become a major thing. I was aware, but it wasn't as big a thing when I was in college, although the awareness was there. The chemistry department took some significant pride in the fact that it had a Nobel laureate who was one of its undergraduate students. I don't think he'd won his second Nobel Prize; that was the Peace Prize, and that came much later.

BOHNING: Yes, that would have been in 1962.

McKENNON: He remains today the only individual to have two unshared Nobels, so you hear that a lot when you're in Corvallis. [laughter]

BOHNING: I was interested in what you said about this degree program which had a business component to it also.

McKENNON: Yes, it was unclear to me whether I would be best served trying to spend my life in a white lab coat or whether I wasn't maybe even competent to do that. I was learning that there are some pretty smart kids in the world, and all of a sudden I was having to work a little bit and some of them were blowing by me. I thought to myself, "Oh, you may not be all that brilliant in the research business. Maybe you'd better learn a little bit about the rest of the world," so I consciously took some business courses. It always seemed to me that almost without exception wherever I ended up—law, medicine, agriculture or pick a field—having a basic degree and knowledge base in chemistry was going to be a pretty good deal for that. If I were going to be a businessperson, as long as it was in a chemical-related industry, I thought that would be good. I concluded for myself and have advised all the kids I get a chance to advise since, there's nothing wrong with it. You don't <u>have</u> to go be a Ph.D. and chase Nobel Prizes. You can go be a chemical peddler or do something else, be CEO of General Electric; [John F.] Welch was either a chemical engineer or chemist. So there are a lot of ways to use that, and I tumbled early to the fact that it might be smart to have a hole card.

BOHNING: Did you do any kind of research as an undergraduate, or was it strictly course work?

McKENNON: No, I spent one of my summers doing research. The three summers during my college years were kind of interesting. During one of them I drove a Caterpillar pulling a combine; in one of them I was a craps dealer in Reno, Nevada; [laughter] and one of them, my last one, I spent at the Oregon State Agricultural Experiment Station doing chemistry for a fellow named Dr. Virgil Freed. Dr. Freed was head of the ag chemistry department and he invited me to spend a summer at the laboratory. That was, in retrospect, probably one of those little chance things that had a huge impact on where I ended up, because I worked on a method for the detection of 2,4-D residues. At the time 2,4-D was a big herbicide, and today's sophisticated techniques for detection weren't exactly available. Darned if we didn't discover one using something called chromotropic acid, of all things, which would detect at, for then, pretty low levels and get a nice purple color in a Klett spectrophotometer.

This was an exciting summer because we got that done. We got it in the *Journal of Ag and Food Chem* very quickly, because everybody was looking for that kind of a thing. For a college undergraduate it wasn't exactly Sir Francis Crick discovering DNA, but it was a development, and Dow was a big 2,4-D producer and it caught their eye, so I suspect that's one of the reasons they were—anxious may be the wrong word, but—prepared to interview me when they came to Oregon State.

BOHNING: How would you characterize the chemistry department at OSU at that time?

McKENNON: In the context of chemistry departments in universities as I know them now, I would say it was mediocre to adequate, not top tier. I feel differently, by the way, about the chemical engineering department there, which I believe was one of the best in the country. Chemistry I would say was a mid-range department, with lots of—even in those days—foreign graduate students who were teaching some labs and who were a little hard to understand.

That may be too harsh an appraisal because I wasn't nearly as motivated until toward the end of my undergraduate career. I was relatively immature in college and, I would say, perfectly capable of getting very good grades but not particularly interested in getting very good grades. I discovered lots of things like fun and girls and all that stuff immature kids do, and it was only in the last couple of years that I snapped out of that and got serious. Then I started to get more from the university than I had before, and that's probably more my fault than its fault. I think it was perfectly capable of teaching me a lot more than I learned, but the chemistry department, I would still have to say, was average.

That reminds me of another funny thing that I probably shouldn't tell you, but I will. The seven or eight of us who were the senior executives at Dow one time were sitting around reviewing the criteria we use for interviewing prospective, science-qualified, professional employees. We had grade points and all this stuff. One of us, maybe me, said, "Okay guys, now no baloney. How many of us, under these criteria, would have been eligible to be interviewed?" The answer, I believe, was one of the seven. [laughter] It was an eye-opener about how things have changed and times have changed. I would not be an interviewee in today's schedule. Paul [F. Oreffice] might have been. He wasn't part of this group. He had left by then. Paul probably would have been. He probably had pretty good grades. The rest of us weren't so red hot there, and maybe there's a message in that about what works.

BOHNING: Did that last summer experience whet your appetite for research?

McKENNON: It certainly whetted my appetite for chemistry. Yes, I think it's fair to say the answer to that is yes. We were quite successful with something that had been a fairly intractable problem for others, and I guess I thought, "Yes, this would be fun." You know, I can't remember. I don't think I ever seriously considered applying for graduate school. I was broke and maybe, subconsciously at least, smart enough to know I wasn't going to be competitive with the great minds of the world in chemistry. Here were some guys who offered me a job with a chemical company I liked, so frankly that option never occurred to me. In those days B.S. chemists could find pretty good jobs and they weren't, if you will, just a pair of hands for a Ph.D. They were doing their own stuff, so I just went off and did it.

BOHNING: I understand that your father said there were two companies that were worthy of

consideration; one was Dow and the other was Stauffer. You've already described why you selected Dow over Stauffer in your interview with Ned Brandt (1).

McKENNON: Yes, I mentioned my dad's comments about Dow, so that's probably pretty well in there.

BOHNING: You started at Dow in 1955 with the title of Research Chemist in the Special Assignments Program.

McKENNON: I suspect a Research Chemist is probably Chemist I or something today. An entry-level chemist is what it was. Research Chemist sounds classier. I was Chemist I.

BOHNING: Okay. One of the things I'd like to do as we follow your career at Dow is to focus on the research environment as you experienced it.

McKENNON: I'd be glad to do that.

BOHNING: So let me ask what it was like when you started there in this particular group. As I understand it, a number of short assignments were involved in this program?

McKENNON: Yes, I went through a training program, which was a number of six-week assignments in different departments. The rationale for that was, "Let's see if we can find a good fit between your capabilities and your interests and a department's receptivity." Lots of us went through that.

BOHNING: Where were you first?

McKENNON: I was at an agricultural experiment station in South Haven, Michigan, first.

BOHNING: Here you are coming out with a B.S. degree; you've done some good research; you've got a paper published, and now you're at a good chemical company. What was your reaction to these early assignments?

McKENNON: First of all, I thought the program was terrific because I got a chance to learn a lot in different places. That first one—and I may have mentioned this to Ned—wasn't a particularly interesting assignment because if there was one thing I knew a fair amount about, it was agricultural chemical experimentation. I'd even lived on an agricultural experiment station, so I was a great trial to the folks running that agricultural experiment station in South Haven because by my own modest admission I knew essentially everything and was in a position to teach them a lot. I'm sure they thought "Oh, what have we got here," but they were patient.

As a matter of fact, years later—that was 1955 so it would have been thirty-five years later—I had the pleasure of presenting a fifty-year pin to a guy named John Davidson, who was the guy running that station when I came there that first day. So it all comes around, and John and I have become very good friends since. I know I was a trial to him then, although I'm not sure he's ever quite said that.

My reaction was, "This outfit knows what they're doing and they're doing some good stuff. I'm going to like this." But again, I was in an agricultural experiment station and not in the big plant. I learned some things very quickly. I remember driving from South Haven to Dow's Midland Division, and I was smoking a cigarette as I came up to the guard gate to go in. I learned a lot about safety rules. [laughter] That guard carved me up big time, and that was just what he should have done.

BOHNING: Where else were you?

McKENNON: What other Special Projects?

BOHNING: Yes.

McKENNON: I went from that experiment station to an organic synthesis laboratory, where I was working on a new synthesis for 2-methyl-4-chlorophenoxyacetic acid, instead of 2-chloro or dichloro, 2,4-D. I worked there for a while. One of the great things that every chemist ought to get a chance to do is work on the fundamental problem of soil stabilization. Everybody wants to stabilize soil and has about one cent per million tons to do it with, so it's an impossible problem; nobody can do it for the economic reasons. Well, I had a project like that. I worked on coating citrus for the purposes of maintaining its freshness and retarding the rate of spoilage. Then I had this project in Dow's Western Division working on water-soluble polymer technology for flocculation, solid-liquid separation stuff. Those were the projects. I believe I have now named them all for you.

BOHNING: How would you characterize the research supervisors whom you were working for?

McKENNON: Highly variable. First of all, they varied in age. There were some relatively young new ones and there were some old hands who'd been around forever, and we're talking the mid-fifties. I would describe them as universally competent and interested in what they were doing, but relatively unskilled in human resource management and interpersonal relations. They were kind of flying by the seat of their pants. In cases where people didn't have inherent competence, that was a bad deal. Where they had it, arguably it's better than today where everybody is overtrained. I'm not sure where that all sifts out, but there was a pretty wide range.

BOHNING: But was there within these different groups an attitude that we want to do good things, that we want to be creative in some sense in solving these problems?

McKENNON: Always that. Attention to the task, commitment to the enterprise, and affection for the company were pretty much universal. I don't recall ever hearing somebody say, "Why am I working for this blankity-blank outfit?" I didn't ever see any of that. There was lots of commitment to the enterprise by everybody. Their ability to execute varied, as I've said, but their level of commitment was universally darned good.

BOHNING: How much flexibility did you have as a young, new recruit to the company, in terms of your input and ideas, as opposed to somebody saying, "This is what you should do"?

McKENNON: It was very surprising to me, but the answer is, lots of freedom. Lots of freedom, a lot of attention paid to ideas that I had, maybe more than was deserved in some cases. I did not <u>ever</u> feel a constraint in that context. They were just <u>surprisingly</u> ready. One of Dow's great strengths, in my view, was its willingness to push decision-making down, to invite ideas to bubble up and not get too suppressed. Now, for much of the time on my first full-time job I was working on a hot project, using water-soluble polymers for oil recovery, and Mr. [Ted] Doan and some other people had a personal interest in that. It may be that I was in a somewhat unusual situation, but I always felt plenty of support, plenty of freedom, never a question was asked, as long as I was committed to staying in the research organization. Once I started to make sounds about wanting to go sell something, then we had a little different ballgame, but within research, they were fair to me, good to me, no complaints, lots of opportunity.

BOHNING: Ray [Raymond H.] Boundy has used the term accountable freedom.

McKENNON: Yes, I think that's a good term. It isn't as though we could all just go work on what we wanted to do. Accountable freedom is quite a good term for what I felt I had there. For a young chemist, we may not have recognized it, but those had equal importance. The accountable side is what makes you grow up and be a productive manager. The freedom side lets your creativity work for you. I like that a lot. Accountable freedom is a very good term.

BOHNING: Just as an aside, I was very fortunate to have two sessions with Ray a number of years ago (2).

McKENNON: I envy you that. He had that book, the physics lab book, and I had a dinner for all of the people who contributed the chapters of that, and Ray was the guest of honor at that dinner. Maybe I thought that idea up. I said, "Let's just have a nice dinner," and Ray came and Sylvia Stoesser came.

BOHNING: We talked to her (3).

McKENNON: Did you? You got her? Terrific.

BOHNING: Yes, Ned and I spent a couple of hours with her, and she was delightful.

McKENNON: Oh, she was a wonderful woman. It may be that that dinner that I had was her last kind of public thing, so I was very pleased she could come.

[END OF TAPE, SIDE 1]

McKENNON: I've always admired Ray Boundy. I had a chance to get to know him early, when I was there in 1955, because Doan was in the research department working for Boundy and he was interested in this Pusher project. I got a little bit acquainted with him. Good times.

BOHNING: You've already mentioned the reluctance of your boss when you said you wanted to go sell chemicals. Let me back up a moment. You came in with an ag background, but you didn't stay in ag very long.

McKENNON: That's true. I wanted the aggies more than they needed me. [laughter]

BOHNING: How did you feel about that?

McKENNON: Okay, for two reasons. First, this polymer business was a chance to get right back to the West Coast, which I was looking for. Secondly, that was a pretty interesting area in chemistry and these were romance projects and everybody was paying a lot of attention to them, so I thought, "Well, there will be another time for ag." And there was, thirty-some years later. [laughter] It didn't bother me. Not a problem.

BOHNING: What possessed you to say, after spending five years in the research area, "I want to go sell chemicals rather than do research"?

McKENNON: I guess, Jim, I didn't believe that I would advance to the senior levels of Dow's research organization. I don't want you to misunderstand that. It wasn't that I had some goal in my life then to become president of something, because I really never ever had that kind of objective, but I wanted to do well and achieve things and be personally satisfied. While I was doing good work in the research area, I watched lots of other folks, and I came in contact with lots of Dow's marketing and TS&D people, and I envied their chance to get acquainted with people outside the company, see what's going on in other places and do other things. I was so naive at the time that I thought, "Well, the best way to learn that is to go out and be a field salesman somewhere," and what I really wanted to do was be in TS&D, Technical Service & Development.

Development's always the thing that has charged my batteries the most, but I was having trouble getting to that from research, so the selling thing was, I just wanted to find out for myself whether I had the ability to interact with people and the skill set that it took to be really good in it, because I knew I was doing okay in the chemistry but I probably wasn't going to be a world-beater. I got curious. I wanted to go find out. It's about that simple.

BOHNING: But apparently your research had been pretty good because they didn't want you to go. [laughter]

McKENNON: Yes, that's true. I don't know how good the research was. It was certainly true they didn't think much of my going. I contributed a lot to this project and it was getting off the ground. That got to be a little battle of wills, as you can see from what I said with my boss. He said, "No, you can't go," and I said, "Wait a minute. I've already decided I'm

going. It's a question of with whom." I liked that fellow very much. His name was Dave [David J.] Pye. He was a terrific guy, but he called my bluff and then I called his and neither of us blinked, so off I went to Shell to sell ammonia.

BOHNING: How did you make the contact with Shell?

McKENNON: I don't remember with certainty. My dad had something called the Pendleton Grain Growers up there in eastern Oregon, and that was maybe Shell's largest, or at least one of its largest, ammonia customers. It's possible that it was through that. But Shell was just down the road from Pittsburg, out there fairly close, and I might have just written them a letter. I'm embarrassed to say I don't exactly remember.

BOHNING: How did you feel selling, at this point?

McKENNON: I enjoyed that a lot. I moved from this white lab coat out there in a manufacturing plant to a desk in the heart of downtown San Francisco, at 100 Bush Street on the ninth floor. You couldn't hardly get more downtown than that. I don't believe I would have been happy doing that for a long time, but the change was so great and I had the opportunity to interact with people. Yes, I'm just a phone chemical salesperson, but I'm scheduling railcars and trying to find better ways to get cheaper freight rates, doing a whole lot of stuff that I didn't even know existed, and I enjoyed that for the time I did it, which was only eighteen months or so. It was very good experience for me. As I told Ned and have said many times, the two best professional things I ever did in my life were leave Dow and come back. [laughter]

BOHNING: And, as I understand it, Dow called you.

McKENNON: Yes, that's true. What had happened there is that a bunch of patents had started to develop from the work I had done before, and they had decided to take this show on the road, if you will. They came back and said, "Gee, we think you might like to be in the Technical Service and Development function, developing this thing that you know more about than anybody else, so we're going to offer you the job in TS&D to go do that." If I had written the job description before I left of what I wanted to do, that was kind of it. [laughter] I had done this other thing for eighteen months; I knew how to do railcars. I had satisfied myself. "Yes, I can do that," so it was perfect.

BOHNING: Somebody up there knew what you wanted.

McKENNON: Oh, yes, there was some divine guidance; it wasn't great skill on my part. I was just lucky.

BOHNING: It was 1962 when you went back, and you were there five years working on the Pusher project.

McKENNON: Yes, that was the five years in which we went to every major oil company in the country and said, "Here's a good deal for you. Why don't you sign up." A lot of them didn't sign up, but some of them did. That was a busy five years. You're right, five years there and then off to Houston.

BOHNING: Were you more involved in the sales aspect of that as opposed to the development aspect?

McKENNON: If you're thinking of development in the sense of chemistry, I was more involved in the selling of the process and the technology than developing the technology, but a lot of what was going on then were actual field experiments with these companies. We'd be out on some big oil field somewhere, for example in the Quealy Dome field in Wyoming, in the middle of the dang winter sitting on a well head putting this polymer in the ground and hoping a lot of oil came out the other end. I did a lot of that, so in that sense, development of the process and getting it sold was the combination. I'd convince somebody we ought to go try this in their field, and then I'd be the guy who got to go out and try it in their field.

BOHNING: Was it a relief when it worked? I mean, were there times when you did this and it didn't work?

McKENNON: Work gets to be one of these definition things, in that process. The idea was, if you were picking up this water, you'd be more efficient in pushing oil out. That always worked, basically, but because the water was thicker, you had to push harder on it or it didn't go as fast, and even though it was more efficient, it didn't get more barrels out the back end because it was harder to push, and all these oil guys care about is how much oil comes out the end. "To hell with efficiency. That extra oil is ten years down the road. We're talking now." So sometimes that didn't work, but it was a peculiar thing.

I'm sure I must have mentioned this to Ned. That was the time, particularly in Texas, when they had restrictions on oil, what they called allowable amounts that wells could produce. If you went to the commission and proved that you were using an efficiency-

improving process, they'd raise the amount that they'd let the wells produce. That was a perfect deal for them. They'd go to the commission and say, "We're using this new process which is going to get more efficiency, but it's expensive because we're going to buy all these chemicals, so you've got to let us increase the production so we can pay for it." That was a good deal, because then they had the money to pay for it right up front and they knew they were going to get more at the end, and everybody was pleased. So it wasn't that the process got you more oil at the front, it was that the commission let you pump more oil at the front, and then you got more later. It was very interesting.

BOHNING: That's interesting.

McKENNON: It was kind of an unusual deal. I remember going in front of the railroad commission and testifying that yes, they are using this stuff, and yes, here's the technical reasons it will work. We sold a lot of that stuff to get some allowables raised in front.

BOHNING: When you're doing something like that, how much proprietary interest is there in the technology? How much can you reveal and not reveal?

McKENNON: We were pretty careful about that because we wanted that stuff injected in a relatively inert environment, and there were things we did with the polymer that kept it from adhering to the clay in the fields so that it wouldn't get lost and hung up as it went through. That was fairly proprietary stuff. We were pretty careful with that. We had a long lead on anybody else at that point in time, and we wanted to retain it, and we had some pretty solid patent positions. The proprietary technology was an important part of that.

BOHNING: In 1967, you went to Houston.

McKENNON: Right. I remember it because it's the year the Astrodome opened.

BOHNING: Oh, okay. It's too bad they're not playing baseball in it anymore.

McKENNON: Yes, right. That's kind of that old question you mentioned about how many people were on the Mayflower. It's kind of like how many people saw the basketball game between Houston and UCLA, when Houston had Elvin Hayes and UCLA had [Lew] Alcindor. I think that's still the most watched college basketball game ever, and probably eight million people claim to have been there, but I really was one of them.

BOHNING: Really?

McKENNON: I did go to that game, yes. I was on that Mayflower. [laughter]

BOHNING: Marvellous.

This was SORD, the Secondary Oil Recovery Department, which you closed down.

McKENNON: Yes, sir, I did.

BOHNING: Was that your idea, or were you given orders to do that?

McKENNON: I was given orders to stop the research activity in the Western Division, and that's what I shut down, where I'd started back in the mid-fifties. My instructions were to gracefully phase that out, and I mean gracefully in the sense of managing the employee aspects. The reason for that was, we decided to transfer that technology and activity to Dowell, which is where it belonged, basically. I mean, if it belonged anywhere, it belonged there more. My job was to go back to my old starting point and make it disappear—not a particularly pleasant assignment, but one that I think we got done okay.

BOHNING: This wasn't the last time you were going to be doing something like this.

McKENNON: That's true.

BOHNING: And of course it really tests one's ability in managing people when you're given that kind of an assignment.

McKENNON: It does indeed.

BOHNING: Looking at an overall research management aspect, research changes as time goes on, so you've got to look at how you can consolidate and best manage your resources. How do you make those kinds of decisions? Is it a business decision? Is it a bottom-line decision to say, "All right, this research group has to be phased out"?

McKENNON: Yes, ultimately it is, in the purer sense, bottom line. I ask three questions: how productive is this area likely to be, in terms of value; how expensive is it likely to be, in terms of cost; and what are my alternative uses of those resources? If I can get that figured out, I can tell you what to do with that project. I can be wrong about my guesses on any of those things, but somebody's got to judge; that's kind of what it amounts to.

One of the problems, of course, with research is being dispassionate about that. When you get into a project and it's yours and you want to make it go and you're the project champion, there better be somebody somewhere who's dispassionate. I can't speak outside of the Dow world, but to the extent I have any sense at all, I don't think that's particularly well done by industrial chemical concerns today. I don't think that's done thoughtfully enough.

There tends to be more focus on the trees and not enough on the forests. Everybody puts together what we used to call SWAG sheets, scientific wild-ass guess sheets, [laughter] about two of those three things at least, and not usually the alternatives, but the first two. The focus was always more on getting those in and getting the ritual than on standing back and saying, "Wait a minute. We're going to use thirty people on this for three years, and this is going to make synthetic ear wax, for crying out loud? Nobody's going to buy synthetic ear wax. We've got too much ear wax." It may be today, but it was not done rigorously enough during the time I was involved with it, in my view.

BOHNING: Several people have told me, as we were looking at the factors that are involved in decision-making, that one factor—and not the only one—but one factor ends up being, for lack of any other words, instinct. You can make all of these judgments you can put on paper, but somewhere along the line there's some instinct that you can't define that plays some kind of role. Did you experience anything like that?

McKENNON: Yes, and I would agree with that, at least in part, and maybe dissent in part. Instinct can be based on historical information and experience. Instinct isn't something you're necessarily born with. You get into a little semantic thing about what's instinctive and what comes from what you know, your knowledge of the people involved, your sense of the broad parameters that are driving society in a particular direction—are we really going to need advanced plastic materials—all of those things become part of what folks call instinct. But in the sense you don't have any good numbers and you've got to make your best guess, that I will accept as instinct.

What I prize most highly—and if you were to ask Oreffice, he would tell you that I for some reason happen to possess in abundance, or at least he keeps telling people I do—is not maybe instinct but common sense, and I think those two things either intertwine or kind of need to go hand-in-hand. It's a little like playing poker. Your instinct might say, "I think he's bluffing. I'm going to bet everything." Your common sense might say, "I think he's

bluffing, but I can find that out for one more dollar and save all my money for the next hand. All I have to do is call him now. I don't have to put it all in there if I think he's bluffing." Well, maybe that's a silly semantic way to show the difference between instinct and common sense. I think both are pretty handy, but I would agree that instinct is part of effective research management, and for that matter, effective general management—not just management of personnel or project priorities, but a lot of other things. Public perception, which I've spent a lot of my career doing, involves some instinct for what you think the reactions are going to be. It's a little like that.

BOHNING: You touched on this just before. You have the possibility, especially in research, of little fiefdoms growing up, and everybody is out there selling their idea to management, instead of looking at how all of this interacts. Was that a problem at Dow?

McKENNON: You bet.

BOHNING: It's a part of human nature, I guess.

McKENNON: It's a part of human nature. That was Dow in the fifties and sixties. Dow had turned that to advantage by letting those fiefdoms compete one with the other on the same project. I'm sure you've heard about that from [Malcolm E.] Pruitt and [Earle B.] Barnes; all these guys will tell you how that was done. I suspect that was productive, from the thoroughness sense. I will tell you that there would be a little languishing on the interpersonal relationships, but that's what they did. They said, "Yes, we've got fiefdoms. Let's give them the same project, and one will win." That is a way to deal with fiefdom-ism, instead of everybody having a different project. I don't think that works today. You can't have fiefdoms.

Another example of this. As the world becomes smaller and more and more enterprises have to think in a global context—and I'll use agriculture as an example—you get your European ag company and your U.S. ag company. You're a big company and you've got all these geographies. Here's a hypothetical compound that is really good on the weed spectrum in Europe, maybe your second best compound on the U.S. spectrum, and maybe really good in Latin America. Well, the U.S. doesn't want you to develop that compound for the U.S., because they've got another one that is really good.

The problem is, you don't have enough resources to develop two compounds, so somebody has to make a judgment about which one you're going to do. If you had all fiefdoms autonomous, you'd be doing two even though you couldn't afford it, and it's the kind of thing that they just put an extra dimension on research. I could give you some general management scenarios with the same kind of thing. It gets more complex now as we're trying

to do global models of things. That wasn't true in the fifties. It's true today.

BOHNING: In a similar context, there's a story I remember. Some researchers went to Willard Dow and said, "Willard, we've got this process. We want you to support this group. We know it will work because it's the way DuPont does it." Willard said to them, "If we can't do it better and differently than DuPont, we're not going to do it."

McKENNON: Yes. Who knows whether that really quite happened that way, but those are the great lore stories. "We've got to do it better and cheaper;" that's one of the old songs. Dow has ridden that horse a long way, and it's still kind of a touchstone. But when you get global, different areas are different enough that the same thing can't always be better in different places, particularly in biological molecules. Weeds are just plain different, and human pharmaceuticals are somewhat that way, too.

BOHNING: After you took care of SORD, you went back to Midland, and that's when you were involved in process chemicals. I pulled out a quote from your discussion with Ned that I wanted to follow up on. Your boss there was Louis Carmouche, and you said, "He wanted the department to be the best, and wanted to try creative and new and unconventional things" (1).

McKENNON: That was Louis.

BOHNING: Could you expand on that a little bit?

McKENNON: Louis was willing to test concepts. He had a department that was more open to that, but Louis would take a flier on some novel idea further than any other department general manager, if he thought that was merited. I can remember us working on everything from Indian baskets, to camouflage for a military application, to propellants for airbag devices—all these really unusual kinds of activities. Louis loved those and embraced them and nurtured them, and would unload them when they didn't play. He had the ability to say, "Okay, we tried that. Now we go to the next one," but nobody minded because there were always so many. It was very fertile. I mean, we did stuff in his department; we built these great big domes over for water treatment plants. We got ourselves in a little trouble here and there with some of that stuff, but he was a creative fellow and loved that.

BOHNING: And did that permeate throughout the group then?

McKENNON: Yes, it kind of did. We were all frontiers-persons, with Louis at the helm.

BOHNING: He almost sounds like a reincarnation of John Grebe, who had a similar reputation.

McKENNON: Yes, but you know Louis wasn't a researcher; he was a manufacturing guy by training, but if Louis had been in research, that would have been Grebe again.

[END OF TAPE, SIDE 2]

BOHNING: There were a number of things that happened at this point. I'm not sure I have it clear in my own mind, because you had all kinds of different responsibilities—environmental control systems, highway products, and construction materials—before you moved into government relations. You said, "As business manager of environmental control systems, I presided over more bad stuff longer than probably any business manager in history."

McKENNON: That's probably true.

BOHNING: Well, we come back to this whole business of how long do you let something that's bad go on before you pull the plug on it.

McKENNON: Yes, and it's a tough judgment call. I was a young business manager with a good research background. We all loved the company. We were all pretty competitive. We wanted our stuff to do well. Human nature will do that to you. It's just not natural—it's harder—for a young business manager to say, "This stuff I'm doing is a bunch of nonsense. I ought to demise all this and pick myself out of a job here." That's <u>not</u> the side of the coin most people look at. They look at the "Let's make this bigger and better and faster" side.

It took me a while to come to the realization myself; this ain't going to serve the company as best as I can judge where it's headed, so why don't we sell these things off to people who would like them better and maybe do better with them, and get the hell out of here. I was slow to reach the conclusion there, and I fault myself. I should have reached it sooner. Louis, my boss, was tolerant of that, because it wasn't as though we weren't making money and weren't doing anything. We were doing okay. This wasn't some big red-ink deal, but it just wasn't going to go anywhere. This was the early seventies, and one of the concepts was, Earth Day is here. There are going to be huge opportunities in the environmental area.

Companies will just make a ton.

That was the prevailing wisdom. I had to buck that and say, "Hey, I think that's going to be very slow in coming. I don't think it's going to be very good return stuff. I don't think we have the right cannons anyway." So I almost had to sell the idea of stopping some of this stuff. I sleep well in hindsight on that set of judgments. But it was hard to do and I presided over some stuff a long time that probably shouldn't have been presided over that long; what I said is true.

BOHNING: Did you have to sell Louis, or did you have to sell further up in the chain of command?

McKENNON: What I did was sell Louis, and Louis took that forward. I got either a note or a phone call, and it may have been a phone call, from Ben [C. Benson] Branch, whom I had not even met, who said, "I see you sold the Surfpac business for two hundred fifty thousand dollars and a supply contract." I thought uh-oh. [laughter] Then he said, "That's just exactly what we ought to be doing with this kind of stuff and with this business, and I compliment you on having done that." It was a nice thing for a little guy who'd never even met Ben Branch to hear, or read, and I think I heard it.

So Louis had done a good job up there, or Branch felt that way anyway. Carmouche, as I told Ned, was fairly tough on his employees, aggressive and direct, but nothing compared to the way he was with his bosses. He derived a great pleasure out of tweaking his bosses, and he would tell them way overhead. If he hadn't had that streak in him, he might have run the place someday, but he hacked off enough people that he never did get there. He was something. Quite a guy.

BOHNING: Another one of these was Amspec.

McKENNON: Right, which was created way in advance of my being there, but which I had to be part of the decision to eliminate. Amspec, again as I told Ned, was in the business of selling Styrofoam and some other Dow products, but it began to see itself as a selling company selling anything for a five percent commission, and that wasn't what Dow needed. What Dow needed was somebody to sell a hell of a lot of Styrofoam on which it made forty percent, not a heck of a lot of everybody else's stuff on which it made five. So it ultimately had to come back in the fold. It was expensive. It was duplicating sales officers and field forces, and it just wasn't headed the right way, at least in my judgment. That one I did have to sell Louis. That one was a harder one for Louis because it was his creation.

BOHNING: Okay. I was going to say, as I read that it sounded like it must have been one of the more difficult ones that you had.

McKENNON: That was a very difficult one. It was very difficult emotionally. A lot of people were involved. They had a great esprit de corps. It would be like dissolving the Marine Corps and putting it back in the Army. Not easy, particularly when your boss is the commandant of marines. [laughter]

BOHNING: Great analogy.

McKENNON: And a great tribute to Louis that it got done, I would say.

BOHNING: In 1976, you really changed directions. You said to Ned, "I think the company needed someone to spend more time with external influences." This was your feeling. How did you reach that decision?

McKENNON: Earth Day had come; the environmentalists were vigorous and active; the federal apparatus for environmental protection was building; the EPA was growing fast. The federal water pollution control act and the air act were all coming, and as I listened to my colleagues inside the company, their general reaction to all that was, hey, we're doing stuff right. Please, those people, just go away and don't bother us. Trust us.

I thought to myself, I don't think that's going to win the war. We'd better understand some of these things and where they're headed. It was in fair part environment-related, but maybe a little more of, "the public is going to get more independent and assertive." We love our plant communities and they love us, and we kind of own each other, but what about a somewhat larger environment than that?

Dow had a great product stewardship program. I was very proud of that. It wasn't well known. I thought, "Gee, maybe there's some opportunity in this, as well as dealing with the problems." I just wanted to understand that better, and nobody else was very interested, it seemed to me. That was an area where, I used to say, "It's a little like raw milk. Everybody goes and gets pasteurized. If you get somebody you can't find a place for and want to put them out to pasture, you send them to government affairs." That has dramatically changed since, but it was a little bit like that in those days.

BOHNING: Well, the chemical industry had a long history of stonewalling.

McKENNON: Right. I think that's fair.

BOHNING: As with Rachel Carson and *Silent Spring* (4).

McKENNON: *Silent Spring* was not everybody's favorite reading in the chemical business.

BOHNING: Of course, that's changed drastically, but it certainly was a long and hard road to get there.

McKENNON: Yes, and there's room for criticism on all sides of that, in my view. Lots of the leaders of the chemical industry were from the old school, the good-old-boy network. I don't think there's much doubt about that. Some of the environmental people on the other side would have found things a lot more productive if they hadn't taunted and teased and used their shock troop tactics. There was no way to dissolve that interface. That's one of the things I give [Carl] Gerstacker credit for. He recognized that problem early, and it was in the late sixties when he did his "There's Profit in Pollution Control" thing. That was very insightful, I think, in the way it was done and handled. I can remember luminaries of the stripe of Ralph Nader himself quoting that and saying, "Now there's a guy who knows what's going on." Gerstacker, at least, had that in focus pretty early.

BOHNING: This changed to government relations. Actually, that was within the plastics department, wasn't it?

McKENNON: I moved to the plastics area. I said, "If I'm going to learn a new area, I might as well learn a new technology, too."

BOHNING: Who did you have to sell to get to this point?

McKENNON: I had to convince Louis, and then, as you'll have read in my interview with Ned, everybody thought I was out of my tree. "Okay, what's wrong with you? What have we done wrong? What can we fix so you don't act like this?" I had to convince the general manager of the plastics department that I was rational for doing that, and that was [Robert M.] Keil. So I had to convince those two guys. Keil has since become a very good friend. In fact, I saw him in Florida last week.

BOHNING: What was government relations like in the company as a whole? Was this really quite new?

McKENNON: No, I think there had historically been a government relations department; I suppose [A. P.] Dutch Beutel as much as anybody. He had lots of political connections, and he kind of knew Lyndon [B. Johnson] and all that stuff, but in terms of an organized dealing with the kind of stuff I thought I saw coming, we didn't really have any. We had lots of political relationships, but no department designed to interface. To a degree, that was also true with the communications. We had a bunch of communications professional folks, but they weren't cohesive. There wasn't an integrated, "Here's what the company really thinks" kind of deal, just Ned holding the fort against napalm, or somebody else worrying about something else. It wasn't very cohesive.

BOHNING: What kind of an agenda did you set for yourself?

McKENNON: Well, I was just in the plastics department, so I didn't have any big corporate agenda. I was still undiscovered, as I would view it, at that point. I was just doing my little thing in the plastics department, and there were two issues early on that I worked on. One was what should our position be on the so-called bottle bills, bringing back the cans and the bottles; the other one was the banning of plastic milk containers in Minnesota. In Minnesota the state legislature decided they were going to outlaw—it was a big paper state—plastic gallon jugs. I took on those two crusades, and kind of as a lone eagle, particularly on that milk jug one, I went off and did those things. It was a time in my life when I'd gone from being a business manager with all this responsibility and all this activity, to being just my own little person doing this one thing in relative obscurity, which was okay.

BOHNING: As I understand it, your testimony in Minnesota caused the company to some consternation.

McKENNON: Oh, yes. I told Brandt that story, didn't I, about Champion Paper threatening to cancel ten million dollars worth of sodium hydroxide orders because of it? Well, that's right, I told them what I thought and there were some folks who didn't like that too much. To their everlasting credit, the Dow managers involved said, "If you said it and it's right, we'll stick with you." It was kind of a great story.

BOHNING: That aspect has shown up throughout interviews with people I've talked to at Dow, the support that comes from above. In a decision that's controversial or that causes some problems, if you're right, or if they feel you're right, you'll get all the support you need.

McKENNON: Or even if you may not have been right but you learn from it and don't make that mistake again. There's the classic Branch saying, "I made more mistakes than anybody, but since I decided so many things I had a better than fifty percent record." [laughter] I don't know whether it's still that way or no; I've been away for four or five years, but I'd like to think that in any part of the outfit I was ever in until I left, people would say that. I hope they would; that's good for the outfit.

One of the things, by the way, that I think helps nurture that is, I'm in lots of other industries now with jobs I have and I talk with other people, and everybody is just stunned by this rule Dow has that its employee-directors have to leave their jobs at age sixty. "You're going to lose all this talent. They're only sixty years old." But it forces people at earlier ages to learn how to do stuff and to delegate stuff, and there's this big cascade down of that kind of support, which I think comes, at least in some part, from the fact that you're going to have CEOs who are between fifty-five and sixty instead of between sixty-five and seventy. Somebody who's forty-five years old, which is not very old, is only ten years away from being CEO of the company. I think that's one of the things that works there.

BOHNING: That whole procedure was Ted Doan's idea, wasn't it?

McKENNON: I believe it was. Another of his great contributions. The business manager concept was one, and that's one.

BOHNING: In 1978, your life changed again, and the company's life changed drastically in 1978. You've discussed with Ned in some detail the events surrounding the change from Zoltan [Merszei] to Paul Oreffice, but I wanted to look at your relationship with Paul and how you dealt with public issues at that time.

McKENNON: From the day I first met the man, I have great respect for Paul as a leader. He has more instinctive leadership skill than perhaps anyone I've ever worked with. It really gets down to the fundamental things it takes to lead. Paul has those gifts in abundance. Nobody can lead like that without having a lot of self-confidence. Nobody can have a lot of self-confidence without at least being perceived as having a fairly strong ego as part of that. I think this all goes hand-in-hand. If you said to me, "Tell me two or three things which made you and Paul work well together," it was probably that I wrote like he talked, so I could communicate with him; that I was perfectly willing to tell him when I thought he was off the mark, but I did that carefully and in private; and that I could, at least with some of them, anticipate the things that would really help him do his job.

I guess the way that all happened was, I was working for Mr. Keil in plastics.

Oreffice was president of Dow U.S., the U.S. company, and I think Keil maybe said to him, in effect although maybe more delicately, "Paul, you need a gopher to help you. I've got a kid over here who I think might be pretty good for that."

That's how all that came together, and I was pretty good. I worked hard at that. I enjoyed that a lot, by the way. It was fun to be one step ahead of the big boss for stuff, and I could get there once in a while. So our relationship was always very good, and as you know has remained good to the point that I invited him to introduce me at the SCI Chemical Industry Medal ceremony this fall. We're still good friends. I talked to him yesterday, as a matter of fact.

BOHNING: During that time period, from 1978 to 1982, there were a number of problems that had to be dealt with. You mentioned to Ned about handling the napalm part. There was the plastics combustibility problem, PVC, and so on. This then led, as I see it, to your being influential in trying to change Dow's public image, and this comes back to what we were talking about earlier—don't stonewall anymore.

McKENNON: Yes, I had the job, Jim, that had that as part of its job description. I mean, what was I? I was responsible for the communications function, the government affairs function, and at least at some point along there, the legal function, so it just fell to me to do what I could to facilitate that change in thinking. I can sit back and say, "Boy, I did a great job there, and changed the course." I can say all that stuff, but the fact is that the driving forces for causing that change were pretty dramatic. It probably would have all happened had I not even been there. I might have facilitated it, but you didn't need to be a rocket scientist to understand that the public is going to be served, so I may have made some of that easier.

Paul had been pretty unforgiving of big government, was pretty anti-government spending and government waste and made a lot of speeches that weren't the favorite cup of tea of the environmental community and some other places. But Paul, to his great credit, knew that the winds of change were blowing and let me pursue that. We had a good understanding about that and he was very supportive and helpful while maintaining his public dislike of big government and waste.

BOHNING: Were you able then to convince him? Did he change in any respect then, eventually?

McKENNON: Yes, I'd say that he listened to me thoughtfully. Toned down may not be quite the right word, but he put a different slant on some of the things that he chose to say publicly. He was comfortable with my suggestions of other people who for specific situations might be a little less combative than he would be, so he didn't have to do it <u>all</u>, all

the time. I think all that worked. There were situations where his natural combative nature wasn't the optimum attitude to have going into something, and while he wanted to get in there and get it done, we respected each other a lot. I hope he would tell you that when you talk to him tomorrow. I certainly felt that way about him. We had a good relationship and I think that served the company extremely well, because he was able to fulfill that role of a leader when the company badly needed one, and we were able to change the company's perception of itself and the public's perception of it, all in one time frame.

BOHNING: Let me follow up for a moment on what you've just said. We've talked about the public image, but after Zoltan and the change between Zoltan and Paul, were there problems with the internal image of the company and did that need to have attention?

McKENNON: You mean because of the change between those two guys?

BOHNING: Yes.

McKENNON: I wouldn't speak for Europe, where Zoltan had a large following and was much beloved, because I wasn't there. I would say in the U.S. and in the corporation that was met with a general sigh of relief; "Now we'll know what's going on and we'll get back to business. We've got a guy here who's going to lead and work hard." I think that was the perception, so that wasn't a tough transition. It might have been a little tough for Europe, but Frank [Popoff] was there and I don't think that was too tough, either.

BOHNING: Let me raise another question. How far down do turmoil or tensions that occur at the highest level of the company reach?

McKENNON: A surprisingly short distance. Maybe more at Dow than at a lot of other places; people are too busy doing what they're doing to spend all their time worrying about what's going on up there. They read the tea leaves and they understand what's going on, but I don't think that's as big a factor at Dow. There may be a couple of other reasons for that.

If you're having that trouble in General Motors, it's on the front page of the *Detroit Free Press* four times a week, every day. "Gee, [John] Smale's in here doing this and poor old CEO Bob [Stempel] can't do that." Dow's in Midland, Michigan. *The Wall Street Journal* doesn't come and write about Dow. There isn't the big public thing, and the newspaper is more into stories about what the Boy Scouts are doing, and they'll do Dow's annual report. There isn't anything that feeds that in the same sense there is in other places. It's not a *Business Week* story. Maybe that's part of why. The answer is, not so deep.

BOHNING: In 1982, you were back in the ag department.

McKENNON: Yes, I got back to it. See there, I finally made that circle. [laughter] Yes, I had a great time there, and I'd like to think we set a course in 1982-1983 that has served that ag business really well.

BOHNING: This comes back to what we were talking about earlier, that you got the individual groups who were working only in their own little areas to work as a unit.

McKENNON: I got them all together and I said, "Guys, we're the board of directors of Dow's global ag business, and we are going to have to decide some very hard decisions, but we're going to do it, and we're going to do it together, and then we're all going to sign in blood, and go get the best results we can get." Then everybody thought, "Oh, what a great idea," and off we went.

BOHNING: So it wasn't a hard sell at all, in that sense.

McKENNON: It wasn't bad. It's like a lot of things: it was great in concept and everybody signs; it's when the first real one comes up that it gets a little harder. I really think I had an unusual group of people there, and they understood and they came to play, and I switched a couple of them in jobs, so the old allegiance had to be different than the new one. You do a little of that, and you dissolve up some of that parochial stuff. It all worked fine. It dramatically improved the performance of the enterprise, and made it possible to join it up with Elanco into what is now a good going machine.

BOHNING: You changed again; you were a group vice president, and you had, again, a number of different things. It wasn't long after that that the dioxin affair came up, and here again we come to this whole idea of the public understanding of chemistry.

McKENNON: Yes, what happened there was dioxin and Agent Orange and all of that stuff began to foment, dioxin being the impurity that was in Agent Orange. Yes, that's probably the second big turn in my life, the first one being when I went to government affairs, and then this one being when this thing became such a pronounced public issue, because the public had seen pictures of Times Beach and the white suits and all of that stuff. I won't go over it again, but you'll read in there I told Ned about the CBS camera crews coming to Midland to try to do their second "Times Beach," and they couldn't find a room because the

place was so crowded. That was a wonderful story which I love to tell.

Again, that was a situation where a lot of common sense and some instincts are called for, and you don't have a lot of time to grapple with those. That's one of the other things. A research problem you can take a week to decide. This stuff, it is instant. The phone rings and there you are. I had some flair for that.

[END OF TAPE, SIDE 3]

BOHNING: Just a couple other things about your career, and then I'd like to go to this list and pick up a couple things there.

Of course, 1992 was another major change in your career, when you were thrust into the limelight again. After handling the dioxin and all the press coverage there, now all of a sudden you really got a baptism of fire with Dow Corning.

McKENNON: Yes, that was a big one. [laughter]

BOHNING: What I'd like to talk to you about with the Dow Corning affair is again this whole business of research and how you manage it and how you listen to what people are saying. You came in as a troubleshooter, as it were, because you weren't involved in any of that earlier. Apparently some of this goes back some years in terms of some potential difficulties, and whether or not people are listening or it's just a matter of somebody pushing an idea without paying attention to some of the other details, I don't know. I was just wondering how you reacted to that.

McKENNON: I've asked the people who were there a little about that. They say some interesting things. They say, "Look, all over the country women are injecting themselves with hypodermic needles and silicone gel. From all over the country we get physicians coming to us saying, 'You know more about this chemistry than anybody else. This is the inert stuff. Can't you make some kind of a sac to put this stuff in so we can quit having women do this to themselves?'" They make a fairly compelling argument that they felt an obligation to be in this business, because they'd convinced themselves that these things were important for women, and if they didn't have them, some were going to do something that was pretty stupid. They'd go on to say, we thought we might build a pretty good business around this. Recognizing we weren't going to make much money with this, we might make a bunch of money in the medical business. I've oversimplified it, but that's in essence what I heard people say.

One could say you want to be very careful if you've grown up in an industrial chemical environment, suddenly making products for human implantation, direct use, whatever—at least in today's world. It was a little different then because all these things were kind of grandfathered as devices, not products. In today's world, you need to have some pretty sophisticated capabilities to even consider being in that stuff. I don't know whether Corning had them nor really knew what was required; the FDA wasn't requiring much, and Dow Corning thought they were doing something to help a lot of people who otherwise might hurt themselves.

It's not possible for me to judge, I don't think, the level or quality of the research done at that time, in the context at that time. I would have to say today that I wish some of that research had been more and different, but I'd be reluctant to judge it then. If you asked me the fundamental question, was that a smart business for Dow Corning to be in, that answer is easy. No, and I said that way before this controversy came along, just on its merits. I don't think there's a chance of making any money with this. I don't think that's the best use of our resources. On the three criteria that I gave you earlier, it didn't cut it, so that was always an easy judgment for me, and I felt that way and said so way before I ever got involved with Dow Corning.

BOHNING: How were you received at Dow Corning?

McKENNON: They were ready for the white knight. They were ready. Dow Corning had the reaction any of us have, and that's kind of the sea anemone reaction; when something pokes it, it balls up and puts the spines out. My approach was quite different, and that one wasn't working.

I wondered about that a little bit, but the situation was difficult enough and the need for somebody to be decisive, on anything, was great enough that that was just not a factor, I think. I doubt it, though you might find one. Out of the seven thousand people there, you might find one or two who'd just as soon I hadn't shown up, but you'd find 6998 who would say that was a good deal. I think. I could have had more trouble if I had gone over there and closeted myself in some room and issued proclamations, but that's not my style or nature. I'm out there talking to everybody, finding out what the hell's going on, asking for opinions, and being very decisive about judgments, and I had no problems with that.

BOHNING: How did you react to that assignment? Here you were essentially winding down at Dow; you had talked about taking early retirement, and your road was clear to going back to Oregon.

McKENNON: Yes, I talked with Ned about that a little, and you'll see it in there. It was a

very painful decision for me. It was a painful decision, which I would not have made had I not been asked in the context of, it is Dow asking you to do this. No individual would I have done that for, but I have an old-fashioned view of loyalty and obligation. That sounds corny and I can't help it, but that's what did it. From a personal standpoint, I had been through one cancer, worked for thirty-five years kind of without taking a break, and I had the break all lined up, had the house bought here, had everything kind of done. And I knew that was not going to be an easy deal, so I didn't want to do that very badly. Once having agreed to do it, I gave it everything I felt I knew how to, so it was okay, but I did not seek that office.

BOHNING: One of the things you knew was that you were going to be in the national spotlight, and in today's world that's such a glaring spotlight.

McKENNON: Yes, that was pretty dramatic. As you probably read, I did a *Larry King Show* eight days or so after being at Dow Corning. Everybody says, "How could you possibly do that?" I tell you, it's a lot better to do it after eight days than it is after forty-five, because you don't have to know everything after eight days. It was pretty interesting. I doubt if in American industry there are more than a half-dozen people—maybe Mr. Burke had it when Tylenol had the scare—but there probably aren't that many people who've had that level of attention. I don't say that with great pride or enthusiasm; that's just the way it was. It was big stuff.

BOHNING: Let me ask you just a general media question. How did you find the media in terms of hidden agendas or prejudices already in place?

McKENNON: I have no way of knowing how many media people I spoke with, but pick a number, a couple of hundred, maybe. There is only one instance out of all of those that I perceived to be biased and not entirely fair. My approach to them was, "You've got a job and I've got a job." The thing that would happen is, we'd get fifty calls in an hour. We can't possibly respond to fifty calls in an hour, so what I'd say to them is, "Look, I've got to prioritize this stuff. Don't kid me now. Tell me when your deadline is. Tell me when I must call you and somehow I'll get that done." Then I could sort them out.

Their reaction to that was, "Hell, nobody ever asked us about our problem before. [laughter] We always say, 'We've got to talk to you now,' even though our deadline is midnight, because otherwise we'll never get you." Nobody ever thought about that before. I'd get to them, always. I never missed one, I don't believe, in all that time, so I set a good tone with them.

And of course, everybody knew I was new. Nobody could ask me the "How did you ever let this happen" kind of question, so the questions for me were, "What are you going to

do about it?" I was ready for those. With just one exception, I was never treated, in my opinion, unfairly or improperly by the press. They asked hard questions, tough questions, and sometimes even mean questions, but I always believed that was their job, and I tried hard to tell them when I didn't know something that I didn't know it. It was a pretty professional relationship, and I have admiration for them. They did good.

BOHNING: Well, that's good to know.

McKENNON: I know I'm in a minority who generally feels that way, but that's how I felt.

BOHNING: We've covered a good number of these items on my list.

McKENNON: Yes, highlight a couple that are of particular interest to you. You can tell by now I don't know much, but I have no problem talking. [laughter]

BOHNING: It's been great. Let's go down here to one towards the bottom. What is important for the future vitality of chemical innovation?

McKENNON: You know, Jim, it's a very interesting subject. I think about it. You get this question, "Has everything important been discovered? Are all the big products already out there?" I mentioned earlier to you today, everybody wanted to work on advanced plastic materials. Today most of those are pulling in their horns and they're all kind of coming back, and what's big? It's polystyrene and polyethylene and all of that. So now you're a researcher and you're trying to find something that will be relevant to a twenty billion dollar chemical enterprise, and research is very expensive. Here's a Dow spending 1.2 billion a year or something on research, and you've got to earn a big return on that and make it matter for a twenty billion dollar company. What's that going to be? That's hard.

That's hard, and it makes the job of research management difficult and frustrating, because the financial guys are always saying to you, "Hell, I'd be better off taking your research budget and putting it in the bank and earning ten percent. At least I'd have one hundred twenty million dollars a year or something in profits, instead of this big loss that I get every year. Not only that, I get my money back from the bank when I'm through. With you guys, it's gone." That complicates the innovative process a little bit. So you put that there. Then you say, "Wait a minute. There is a guy named Bill Gates who figured out some half-assed way to make a program to make a computer work, and he's the richest man in the world. He did all that in fifteen years. Don't tell me there's no room for innovation."

Where I come out on all that, to answer your question, is I think there is lots of room for innovation in chemistry and chemical technology. The particular area that seems to me to just have immense promise going forward, at least from what I can see now, is bio-engineering and biotech, although I hate to use the word biotech because it's an overused word. As we understand more and more about the human genome, which genes do what stuff and what changes them, I take all that and then I look at the demographics of what people are ready to pay for quality of life, the demographics that everybody's living longer anyway, and I say to myself just from a commercial context, let alone from a social and humanitarian context, "Boy, there's a lot there."

It goes beyond just disease. For example, here I am talking to you. What are the chemical changes in my body that are occurring that cause me to talk to you, or to think about what I'm going to say to you, or for that matter, that make my jaws move? A lot of stuff there is not well understood, and that's not railcars of polystyrene. It might be milligrams of something, but oh, are those going to be valuable milligrams. All that's changing. At the same time, there are still some very fundamental things in the railcar arena. I mean, nobody has yet figured out how to directly oxidize propylene to make propylene oxide. If you and I did that this afternoon, we could buy Arizona. [laughter]

So I think the horse is alive and well, although I hear from folks every once in a while who say the horse is dead, like the patent guy in 1856 who said, "Everything has been pretty much invented." Well, I think this is 1856 for the chemical business. There's lots there.

BOHNING: You've commented about how much Dow spends on research. My impression is that in lots of places either the research budget has gone down, or it's more short-term oriented, and there's very little in terms of a long-term agenda.

McKENNON: That comes from this pressure on profitability, on financial performance, allegedly productivity. You can get into some pretty interesting arguments about how productive—how efficient is maybe a better word—you can make research. You slick it up and trim it up and have everybody have their little timecard so they're always at the bench instead of thinking and looking off and dreaming. You get into interesting things about what's efficient and what's productive there.

I don't have as broad an experience as I'd like to be able to draw on here, but I have to say this. It will come across as fairly critical, but I want to say it anyway. I believe industrial research has been significantly less productive than it might have been or should have been, and at least part of that—not all, but part—is because it has been unnecessarily inefficient. Of all the management skills that are important in large chemical enterprises, the one I would tell you that's least developed is research management.

I have met a zillion managers—research managers, general managers, chief executive

officers, marketing managers. If somebody said to me, "Forget the discipline and pick the top twenty people of all the people you've met, just for their inherent competence and ability to do what they do," I don't think any of them would be research managers. Not one. That's a bad deal. Why is that? I don't know quite why it is.

You could make an argument that somebody who has spent his career learning how to be a brilliant researcher is unlikely to be a brilliant research manager and probably shouldn't be wasting his time doing that. People who aren't going to have the skills to become a great researcher probably don't start in it, and you can't be a great research manager without understanding a fair amount about research, so there's kind of a narrow cut there that is the raw material base. That's a little bit of the problem. If you try to take a director of marketing at age fifty and have them be director of research, you're dead in the water. You can't do that. If you take a Ph.D. chemist who has spent forty years at the bench and have them be director of research, you've got to be lucky for them to be good. There isn't a cadre of raw materials. That's one problem.

The second one—which has always been an amazing thing to me—is that if I look at the top hundred highly paid people in a typical chemical company, I don't think I get to a research chemist. Not the top five, the top hundred. I don't think I'd get to a research chemist. At least not anybody doing research. I might conceivably get to the director of research and development, who's a research manager all right, somewhere up in there. I can find marketing executives; I can find people running regions, geography people, people running manufacturing plants; I can find all that stuff, but here's this group of individuals whose inventions drive all that other stuff. They drive it all. Now, they've got to have all these other people to make them turn into a reality, but without the seed corn, nobody grows corn.

For years I have fought the system that defines the size and value of those jobs; though a lot of people don't report to them, they don't have big capital budgets and all those things that go into what you should get paid for, they can get a hundred percent on intuition, but what if that's only ten percent of the total? If I was a brilliant young manager, if I was infinitely smart and it was square one and I was deciding what I was going to be a manager of—and I could be the greatest research manager that ever lived—I probably still wouldn't go do that, because I ain't going to get Popoff's job doing that. [laughter] I worry about that, and here's a chance for me to get it on the record.

I'm just some little guy out here in Arizona, but if I had it to all start over again and I had my own great big chemical company, I'd by God fix that. I would develop myself some professional research managers, starting at an early age. It's possible to do that. When I was at Dow and got the communications function, we had no communications training ladder, nothing like that. What we did is hire a bunch of slide rules and teach them how to type, basically, and I said, "Goddamn, guys, let's hire some typewriters and teach them how to run slide rules here. We need professional typewriters." I think maybe we need some professional research managers, and we might even have to grow our own to do that, but I'd

tackle that.

That's something that has been amiss, and I think it's led to some of this lack of productivity and effectiveness. I was briefly director of research and development for Dow. It strikes me to this day as remarkable how much feeling came to me from the research community because I had that job and because of the way I did it. I got plaques and I get letters and I'm getting invited every year to stop. The research managers who went all the way through that, for some reason or another that didn't ever happen to them. I know [Malcolm E.] Pruitt's got a building named after him and all that other stuff, but I'm just telling you in the same context it ain't the same, and I worry about that. My only experience is Dow experience, at least my only in-depth experience, but I listen to folks and talk to folks in other outfits, and I get a very similar kind of thing. It's something to think about.

BOHNING: That's great. I think our time may be just about up. Is there anything else you'd like to add at this point?

McKENNON: No, I don't think so. You've got that long interview I did with Ned for the Dow side of that. You might, if you haven't seen it, just somewhere get the essence of what I said at that Medal dinner (5). I only think I said two things at that Medal dinner. Let me just get them on the record here. One of them was, in this business we've taken a lot of hits. We've done some things wrong. We aren't perfect. We were pretty defensive for a long time, but we're in the business of working with some complicated and sometimes toxic materials, and once in a while something isn't the way we'd like it to be there. Recognizing that and saying it, then I say to you, if our objectives being on this earth are quality and longevity of life—to have a good life and to have it last a while—then I believe this discipline and this technology have done more for that than any other, anywhere, period.

I really do believe that. You can pick any aspect of social behavior or of society, in terms of the fundamental things—clothing, food, transport, all that—and you look at where they'd be without the advances from this technology, and I'll tell you, this is the one. I hope we remember that as we talk about all these new relationships, and when somebody says to me, "I think all the discoveries are done and the party's over," I say, "Read what that guy said in the patent office in 1856." That's my last salvo.

BOHNING: Well, thank you very much for spending the morning with me. I've enjoyed it. We've covered some really good stuff.

McKENNON: I've enjoyed it, too. Now, we have an afternoon for you. [laughter] You can go out and bask around.

BOHNING: It's a beautiful day.

McKENNON: Yes, this is a nice day. You picked a good time to be here, and I appreciate your coming.

[END OF TAPE, SIDE 4]

NOTES

1. Keith R. McKennon, interview by Ned Brandt in Midland, Michigan, 9 June 1993 (Midland, Michigan: Post Street Archives, oral history transcript).

2. Ray H. Boundy, interview by James J. Bohning at Higgins Lake, Michigan, 21 August 1986 (Philadelphia, PA: Chemical Heritage Foundation, oral history transcript #0053); interview by James J. Bohning in Midland, Michigan, 9 September 1988 (Midland, Michigan: Post Street Archives, oral history transcript).

3. Sylvia Stoesser, interview by James J. Bohning and Ned Brandt at King's Daughters Home in Midland, Michigan, 17 August 1990 (Midland, Michigan: Post Street Archives, oral history transcript).

4. Rachel Carson, *Silent Spring*, (Greenwich, Connecticut: Fawcett Publications, 1962).

5. Michael Heylin, "A Splendid Occasion," *Chemical & Engineering News*, (24 October 1994):5; Marc S. Reisch, "SCI Medalist Keith McKennon Airs Views on Handling Crises and Industry Image," *Chemical & Engineering News*, (10 October 1994):17-18.

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