

a much greater volume than we could during the day-time. Because at night, all you see is the surface of the water.

Q: Well, these were private utility companies that were--

A: No, well, the Canadian government has an electrical authority of some sort. Who owns that power station on our side, I don't know, but I believe it is the New York Power Authority.

Q: Okay, returning to the period about 1951, you entered the National War College in 1951. Then in June of '52, you became the deputy commandant of the Industrial College of the Armed Forces, a position which you've already remarked you enjoyed immensely. About that time you became brigadier general?

A: During the time I was a student at the National War College.

Q: During--actually--before that time.

A: The stars were put on a blue serge suit in Paris. And I have a picture of that with General Bull putting them on.

Q: In July '52, you were appointed the Division Engineer of the Missouri River Division. The floods, the '52 floods, were only a few months before that time.

A: They were on their way down.

Q: Yes. Did that have anything to do with your getting that position, that they wanted somebody out there to take care of the floods?

A: I think Pick wanted somebody out there who he knew could--that he had experience with, really.

Q: Let me ask you some general questions dealing with the Pick-Sloan plan, really. Was Pick, to your knowledge, and I realize this goes back before your time at MRD, but was Pick's plan really Pick's?

A: Pick and Sloan.

Q: Well, okay. We have testimony--I've seen testimony where Pick said he didn't even know Sloan too well, and that as far as what he developed, I mean, he developed independently without too much of Sloan's help. But I'm wondering even to that extent, how much did his own staff develop those plans?

A: Oh, the staff were the workhorses. Going back just a little bit, as I remember historically, Pick developed his plan in the MRD. Sloan developed his plan in the Bureau of Reclamation. Both of them included a great many of the same things. And the problem was to avoid a knock-down, drag-out in the Congress. It seemed better to put the two plans together. And the end result was, simplifying it, that we got the mainstem dams and they got the dams on the Yellowstone and other places. They also by law are the distributors of electricity. We generated electricity at our dams and turned it over to them for distribution.

Q: Did the '52 flood have much of an effect on the development of the Pick-Sloan plan? In other words, did it perhaps accelerate the development because of fears of people and so forth?

A: Well, it had a very serious effect on a lot of the elements of the Missouri River plan. Before that, we had thought that the highest water on the Missouri River was the 1903 flood. Everything was designed around that as being the "grandpa." The '52 flood was larger and except for some massive sandbagging may have gone over some of our levees. I think it may have even gone over the floodwalls in Kansas City. So it was necessary to revise the volumetric part of the design criteria as far as heights were concerned of levees and other protective devices all the way down. As to their effect on the mainstem dam, they were large enough to take care of the '52 flood. But it did cause us to revise some of the plans for the Kansas River, maybe strengthen spillways and all that sort of thing prior to designing the dams.

Q: Well, are you saying then that the '52 flood exceeded the so-called project flood that was being used?

A: Yes.

- Q: And was the project flood the same as the 1903 flood? I would imagine there would be some sort of margin of error.
- A: Oh, yes. As far as we knew historically, that was the largest flood that had ever happened. And we do a lot of research. We go around and see high water marks and happenings on ground centuries back to see if anything else has ever happened that we could identify. But 1903 was the criteria with some margin on top of it. But nothing like the '52 flood had ever been in our planning.
- Q: Well, so then to be the gadfly for a moment, would you argue that there was poor planning on the part of the Corps not to be able to--
- A: Oh, no. I don't think so because you've got to defend these projects before the Congress and we don't always design a project on the basis of a 1,000-year flood. In an area that can't justify the cost of a large project, you design it on the basis of a 50-year flood. For instance, my gates out at Disney World are based on a 50-year flood as are the canals. You take a calculated risk and protect against the maximum flood that the economics will support.
- Q: Was there something that happened in terms of projects that had been already built on the river, the Missouri, that may have somehow contributed to this increased flood in '52?
- A: The size of floods on any Midwest river, especially the Missouri, depends upon the thickness of snow in the Rockies. And there are very fine instruments in those snow places up there that tell how deep the snow is, and they are monitored continually by the Weather Service. And then it also depends upon how fast that snowmelt gets out. And that completely depends upon the weather, the heat and the temperature up there where the snow is. That is all carefully watched all year around. You've read this year that the snow cover up in the Rockies is not as great as it's been in the past, and people are worried about what is going to happen to agriculture and power generation in the Great Basin.

I say this, that in the '52 flood, the calculation of the height of a flood at a certain place done by

hand is a very time-consuming exercise, very time-consuming. Fortunately, we had the Missouri River model at Vicksburg. And while we did a lot of calculation, as I understood it in the MRD, I came there after the peak had passed. I was told and I visited Vicksburg afterwards, that the constant telephone connection with Vicksburg, and the putting into it of information in volumes at Fort Peck, for instance, and how the Yellowstone was coming out and all that, enabled us to be extremely accurate at Kansas City or St. Joe or other places, but specifically Kansas City. As a result, we were able to give them much more warning to get some more sandbags on those levees than they would have had if we did all of that calculation by hand 24 hours a day. So the Missouri Basin model was our guide during the time of that flood and it worked 100 percent. Did you ever see those models?

Q: Oh, yes. They're fascinating.

A: Yes.

Q: I presume that the '52 flood would have accelerated demands by local interests to get the Pick-Sloan plan moving.

A: Oh, you better guess.

Q: Well, turning 180 degrees, really, in the other direction, there was a drought in the '50s too. Do you recall the drought affecting Corps responsibilities in the basin in any way, shape, or form?

A: No, I really don't.

Q: Okay. The state of Montana seemed to have been, if not the most, one of the most vociferous objectors to phases of both the Pick-Sloan plan and the Missouri Basin compact. Do you have any recollection of objections by the state of Montana? I suppose your recollections would basically have to do with drawing off water from Montana to other parts of the basin.

A: Well, sort of vaguely I do remember that they didn't feel that they were getting the benefits of the whole plan. For instance, when I went on the Hill and talked and asked authorization to increase

about that. You ought to read the testimony. You couldn't afford to neglect the appeal their testimony had before all the committees of Congress during the time I was there, or my predecessors or successors. Their local project was of great importance to them, even more so than a major project such as Garrison Dam.

Q: Well, I've seen some of it. In a letter to Governor Anderson, you hinted that inflation was a problem for projects even at that time. Do you recall any particular problem with inflation?

A: Did it exist then?

Q: Yeah, it seems to be a problem. It's been with us for awhile.

A: I hope I didn't invent it! [laughter]

Q: In that same letter, you also said that the Corps saved millions on Gavin's Point, Fort Randall, and Garrison. And I'm wondering, how did the Corps save millions?

A: Well, if you want to relate it back to the inflation, by getting the jobs done orderly but fast without delaying completion. We always seemed to be well funded for the Missouri Basin dams. I mean, rarely were we cut down, rarely. I remember one thing that happened. The Garrison Dam was on the books and had been defended before the war, and my figure may be wrong, as a \$64 million project. I probably meant that increased cost of the construction, labor wages, and the price of equipment, and all that sort of thing caused by the war. It was my duty, finally, one year because we couldn't hold off any longer--Pick would never let me tell him that the cost had gone up to \$75 million. It got to the point where we were asking for more or less finishing monies, or last phase monies, but that were going to go over the \$64 million and, "Why is that, Colonel?" I said, "Well, we've reevaluated everything." My testimony on that point is very good. I mean, you should see it. Anyhow, they finally accepted that fact that it was going to cost more than we had originally--than General Pick had originally said it was going to cost. But he protected that \$64 million--if that's the right figure--tooth and nail for a long time, until I finally had to tell him, "How the hell are

we going to ask for \$72 million when it's only going to cost \$64 million?" So you think now, the difference between 64 and 72 is \$8 million dollars. Today that's way to the right of the decimal point.

Q: Sure, right. So you think that probably what you were referring to in this letter to Anderson is simply that the expeditious construction helped to beat the rise of inflation?

A: Yes. An important part of my job was to keep close relationships with all the governors of the states, with all of their bureaucracies that had to do with our projects. See I had military construction in ten states, besides the civil works. And that involved the airport up at Minneapolis-St. Paul. I forget the name of it, but we had to do with re-vamping that airport, the military project. So that we--well, I don't want to say it's a political job, but you had to keep hands on with the political entity because their lives, politically, depended upon some of these projects in important parts of their states where the citizens realized the value of the project. And I will always remember the great support I got from many of those governors. One of them, the governor of North Dakota, just a great guy, a great guy. And the governor of South Dakota who was that Marine Corps General, Joe Foss, who received the Congressional Medal of Honor. A great hunter, also, and fisher. All top-drawer guys who were practical and sensible, but politicians who knew how to represent their citizens.

Q: We're going to talk about some of these people in a moment, I think.

A: Okay.

Q: This is a stab in the dark but I wanted to ask you this question. Did the steel strike in '52 and the collision between Harry Truman and the steel strikers in that year, did that affect Corps work at all?

A: I think the problem we had with steel was intense after the war when steel supplies were in short supply and the steel mills were reverting from civilian products. No, I can't remember anything specific--oh, yes there was, There was a great--

because of the shortage in rebars, reinforcing bars, there was quite a development of an industry to make rebars out of rail steel, old rails that had been pulled up and been replaced, you know. This was quite an active group. And the only trouble was that rail steel is more, not friable, but brittle steel than what rebars are supposed to be made of. The darn rail steel usually wouldn't let you bend in a "U" in four seconds or something like that, and we were always squabbling with the rail steel-rebar people about not buying their product except for certain specific requirements. That was a problem I remember in Kansas City.

Q: Another sort of stab in the dark. The 1950s was the era of the grain surplus problem, as you recall, surplus in the granaries and so forth. Do you recall whether this grain surplus problem affected SCS, Soil Conservation Service, plans for small reservoirs and flood control activities in any way?

A: No, except that during the time I was in Omaha, and I don't remember if when I was in Kansas City just a few years before, the Soil Conservation Service became quite a vocal group and had, of course, a large entourage from among farmers. They--those were the days when they were really trying to get contour plowing under way. They had their own reservoir planning ideas. And we had quite a squabble around Lincoln, Nebraska, I think it was--do it or we'd do it and we had to come to a meeting of minds, and we'd do certain things and they'd do other things.

Q: General Whipple gives you credit for putting a new budgeting and accounting system into operation while you were Division Engineer. He said that, and he was looking at it from the point of view of OCE at the time, he said that he thought that you were the only Division Engineer who really got this new accounting procedure into operation. And I'm wondering if you can comment on that, if you could describe the system which Whipple at least was very keen on?

A: I wish I could. [laughter] I'm glad I did it. [laughter] I've always been very cost conscious.

You see, you have to defend your requirements for money and your expenditure of money. It's always been stated that the Congress is the greatest provider of money and the poorest manager of money that exists in this world, and I guess that's true. And maybe they won't deny it. But when that money, which is a public trust, gets in the hand of the spender, he is subject to, more so today than then, rigorous examination by the Bureau of the Budget. I think the toughest questioning I ever got was going before the Bureau of the Budget with my proposed budget for the next year because they had people there who knew these projects inside and out. They kept close track of them, and they knew more about them than the congressmen did--financially. And it was essential that you knew something about how that money was being spent. The art of accounting, I don't know, is still developing. But I did have that consciousness, and I may darn well have insisted on refinements in the system then so that I would at least know how I could talk about things.

One of the things I sent up to West Point in my memoirs was a hell of a big folder of speeches that I made in the Missouri Basin and other places. Whether that's mentioned in there, I don't know. Mostly they were probably--

Q: I think it's mentioned in some of your correspondence actually back to OCE.

A: The biggest change I ever made in any accounting was in Alaska when we had to get out of a wartime philosophy of funds and into a peacetime philosophy of funds. By the time I left there, those accounts were in damn good order, and we knew what projects were costing. If you're on a cost plus fixed fee on both design and engineering and construction, you can almost defy anybody to tell you what something's going to cost.

Q: Do you recall any problems the Corps had with the Rural Electrification Administration, REA?

A: I think the struggles there, probably, were between the Bureau of Reclamation and the REA. See, we were hands off on the electricity once it left our busbars, though we felt we could have done a better job than they did. But the electricity wasn't ours.

- Q: Do you recall whether the REA was pushing maybe for steam generation versus--
- A: Hydro?
- Q: Hydro, yes.
- A: No. We wouldn't have had anything to do with that anyhow, you know.
- Q: No, but these were some topics that you may have heard about, that's all.
- A: You see, in Iowa for instance, and you've touched a little chord, I think there were 11 power utilities in Iowa. And I remember having arguments with some of them. And what they were about and why I was arguing with them, I don't know, but there were very positive feelings on their part that the power should go to them and, I suppose, would I support a bill in the Congress to give our Randall power to them, for instance. I don't know.
- Q: How were relations between the Corps and the Bureau of Reclamation while you were in the Missouri River Division?
- A: On a personal basis, very friendly. Due to the Pick-Sloan plan, what was theirs and what was ours was defined. And I don't remember--we would like to have built the Yellowstone Dam, which was a big prominent project. We thought we should build that, but the agreement that was made between Pick and Sloan was that that was theirs, and they better keep their hands off the main stem.
- Q: Well, as a matter of fact, you did suggest to the Bureau of Reclamation, or suggest to General Pick actually, that the bureau and the Corps do some switching, and you suggested that Red Willow and Pioneer dams go to the bureau, and Glen Elder and Wilson go to the Corps. As a result of that, evidently Red Willow did go to the bureau, and the Corps did get Wilson Dam, but the other two dams were not switched. What were the reasons for those switches.
- A: Probably--you see, what is it the 57th parallel? No.

Q: 97th, I think.

A: 97th is it. West is theirs--when that came out, I don't know. West of the 97th is theirs, and east of that it's ours. My feeling was that if a project was totally flood control, it should be the Corps of Engineers. That kind of squabble came up in California, too, you know, with the dams out there which we insisted on and we built. Of course, there was some irrigation on those things, too. But mostly they were flood control and power. And we were very defensive on having those things. I don't know if we are today, but we were then.

Q: Do you recall anything about the relationship between Nebraska's Public Power Corporation and the Bureau of Reclamation?

A" No. You know, in the Missouri Basin, especially in South Dakota and even in Nebraska, during the Great Depression, those states became quite social. And I don't mean social with parties, but socially oriented. South Dakota even has a cement plant that they operate as a state entity. Kansas is very strong in rural electrification. There are two big power entities in Nebraska. One is the Omaha Public Power, and the other is the Nebraska Public Power, right?

Q: Yes.

A: But those things resulted from the Depression when these states went into self-funding projects. Where they got the money, I don't know. But even here in Orlando, you know, we have the Orlando Utilities Commission owned by the city of Orlando.

Q: Do you recall working with Karl Mundt in developing the Big Bend Dam project in South Dakota?

A: Oh, yes. He was quite a guy, really. The problem was, the dams were all in the plan, the problem was getting them going. Fort Peck had been finished, of course. The first big dam was Garrison. And when I got there, Randall was at least half completed. Oahe I started and got well along while I was there. The Big Bend Dam came after. We'd always thought about it because it was obvious there was

quite a drop of water from above the bend to below the bend, and power generation seemed quite feasible at that point. But I had nothing to do with that whatsoever. I did do the one at Yankton, Gavin's Point, which is a control dam for plants upstream and navigation downstream. It's remarkable what those dams have done with clarifying the Missouri River.

Q: Well, was there significant opposition to the Big Bend Dam project?

A: I don't remember any.

Q: On September 2, 1954, you wrote a letter to Emerson Itschner, Assistant Chief of Civil Works, and you wrote, "I have no joy in writing this letter, but the change in policy which you are apparently making with respect to relocations hits too deeply, and in my estimation, violates so severely common practices that we've had for at least the last ten years, and probably longer, that I must express as energetically as I can my complete unhappiness with the policy that you've enunciated in your endorsement to use on a road and bridge relocation on Oahe." This strikes me as a very, very strong letter coming from a Division Engineer to the--

A: I was a spoiled brat. [laughter]

Q: Can you give us a little bit about the background of this thing? Do you recall anything about this?

A: No.

Q: Itschner evidently took a policy that you had articulated on the Oahe Dam and expressed objections to it, and you thought it was a basic change in Corps policy dealing with relocations.

A: No. Of course, there're always relocations where the small tributaries that come into a dam interfere with an old road and you have to relocate the thing. Shucks, I've been doing that ever since Tygart. We relocated a whole railroad there, and the government paid for it, the relocation. What the change of policy was, I don't know. You'll have to ask Emma.

Q: It may be in that bundle of letters.

A: Yeah. When was Itschner assistant chief? Do you remember?

Q: I don't have his exact dates, but he evidently-- this letter was sent to him while he was assistant chief on 2 September '54.

A: And see who was the Chief then?

Q: Would it be Sturgis?

A: Yeah, Sturgis, I guess. I'm glad I wrote letters like that, instead of namby-pamby ones.

Q: No, you didn't. You came right out with it. While you were Division Engineer at MRD, there was a lot of military construction going on.

A: Oh, yes.

Q: Was this military construction part of the effect of the Korean War or was this--

A: It may have been, but there were enormous military projects and smaller ones too. For instance, there was a chemical plant down there in St. Louis that--what did it produce? Some highly volatile chemical, I think. But we had quite a problem getting that thing under way. There were many projects that were put in during the war, you know, and had to be brought up to date maybe because of Korea.

Q: You were talking about the reasons for increased military construction in the Division.

A: I think there were ongoing programs. I remember when I went there, as I remember, I turned over a large part of the military construction to the Kansas City District. It wasn't enough to keep all the Districts involved, but some had a very strong military program. But while I was there, we did build big airfields and improved airfields for the Air Force in Kansas and Missouri. Another project I had, Curtis LeMay didn't like it, I built him his new headquarters building there in Omaha. He basically didn't like the Corps of Engineers. He felt

that they should do it all in the Air Force. That was always a problem.

Q: Talk about General LeMay.

A: What a guy.

Q: One of the depots you built was the Sunflower Ordnance Depot. Were there any particular problems with that depot that you recall?

A: No. One I had something to do with is that chemical plant out in Denver that produced nerve gas.

Q: Right.

A: I only visited it once.

Q: There were some difficulties with the Air Force when it came to coordinating Air Force base construction. Particularly, for instance, you had some problem with determining land use at the Lincoln Air Force Base.

A: I don't remember that particular thing, but as I said before the Air Force did not particularly appreciate the Corps of Engineers. We had our directives from the Congress--not from the Congress so much, but from the Department of Defense as to the quality of things that should be done. And I remember very well that Curtis LeMay felt that his base there at Omaha, he wanted to build quality buildings for the soldiers, but it wasn't in the bag. We were never close, I mean, never friendly. He accepted the fact that I existed, and that's about all.

Q: How did you find him? Was he--he sounds like he was a bit overbearing.

A: Oh, he's the guy who invented SAC and he did it by being rough and tough, not only on his own soldiers, but on everybody else. He really made SAC, and it was only the discipline that he put in that caused that to be the organization that it is today.

Q: But did you like him?

A: Not particularly. Not particularly, because he was impolite. Goddamn, he'd go to an important party and sit there with a cigar in his mouth. To me, that was socially unacceptable. Well, that's not too important militarily. It is as far as getting along with people in town. First time he went to play golf at the Omaha Country Club, I heard he wore his pistol the whole damn time he was playing golf. Another time, I went down to inspect a big base we were putting housing on down in Kansas, and I was a B.G., and the commanding officer was a colonel. Then I went in on an appointment to sit down with him and discuss things, and he opened a drawer and put a .45 on the desk. Well, that's alertness.

Q: Something like that.

A: Yeah.

Q: Do you recall any particular problems you had with the construction at Sedalia and Smokey Hill Air Force bases?

A: I think Sedalia was the one where we were putting in aluminum siding on the barracks, and they didn't particularly like it. And that's why I think I went down to Sedalia to talk to those people.

Another of the problems that came up--they'd gone to a new generation of airplanes after the war, and the tolerances in the runways that were in our specifications were those that were acceptable to the Air Force at the time they were approved. But the pilot sat so far forward in these newer bombers that if you had as much tolerance as we had, the pilot was going up and down like a yo-yo because he was so far ahead of the wheel. And we had to go to much closer tolerances in the surface of many of those airfields.

Q: Well, in relation to these asphalt airfields, you were afraid that some contractors would submit, what you called in one letter, "take-a-chance bids," and get burned. Do you recall that?

A: Not particularly, but you always had to watch out for several things in construction of things like that. One was the quality of the aggregate. And a

contract will try to get by with an aggregate that's proximate and will save him money, whereas the specifications will require a different aggregate. Asphalt--placing it is of vital importance. You can't place it when the surface underneath it is wet or when it's raining, or anything like that. And the contractor will want speed to save labor time, and that probably pertains to making sure that our inspection was rigid.

Q: Do you recall--was the incendiary oil plant at Denver within the Rocky Mountain Arsenal? Was that on the arsenal grounds?

A: That's not the nerve gas plant?

Q: Well, now, frankly, I'm not certain because it is called incendiary oil plant, and I take that to mean napalm. Would that be correct?

A: I don't remember that. The only one I ever visited out there in any depth was the nerve gas plant.

Q: Were there any particular problems in constructing--building that building?

A: No, it was almost done--it was really under the supervision of the Department of the Army but we had the construction contracts. And it's a very touchy project as far as safety is concerned, as you can damn well imagine.

Q: Sure.

A: And I was very much interested in that the safety requirements were not only being met, but were actually safety--

Q: What kind of special safety requirements were there?

A: Each of the floors was grilled. There was no solid floor, they were grilled, and any place anybody worked in there, there was a big shower head in case anything leaked. A fellow could pull a shower head and douse himself.

Q: You went to make Garrison into a military district to work on Glasgow, Minot, and Grand Forks

Air Force Base, but it never happened.

A: At one time there was a Garrison District, but it was totally involved in building the dam, and expanding it to do these other jobs would have saved some travel and made the administration a lot simpler.

Q: Why wasn't it approved?

A: Because the dam was getting done. You see, we had a town at Garrison, we had a town at Fort Randall, and, I think, at Oahe. And they were pretty nice little towns, and they would have had a purpose for a permanent organization. And I think on that case, I was thinking up a subdistrict, really, that would take care of Minot and what was the other one?

Q: Grand Forks, Rapid City, I think those were the three. Glasgow and Grand Forks.

A: Yes.

Q: At you Garrison and Fort Peck sites, just out of curiosity, I'm wondering what were ranks of the people in charge?

A: Resident engineer.

Q: But were these military or civilian?

A: Civilian.

Q: Okay. So you didn't have any military at these sites?

A: As I remember, maybe at one of them. I seem to remember visiting a captain at one of those sites, it may have been Garrison.

Q: Do you recall how large the organizations were at these places? I mean, about how many men or how many personnel?

A: Well, I'd say in the 40- to 50-person range, something like that. There were adequate houses there. Maybe it was much more than that. They probably did some on-site engineering too.

- Q: Do you recall the differences between these two dams, Garrison and Fort Peck, the structural differences?
- A: Well, both are earth dams, both have powerhouses. Garrison is much larger than Fort Peck, size-wise. I think its lake and its volume is much bigger than the other.
- Q: At Garrison, what effect did the Corps' taking of land have on the Fort Berthold Indians?
- A: Well, the Indian story is a long story. These reservoirs impinged on Indian lands. Indians are not the most ambitious people in the world. Their lands are really managed by the Bureau of Indian Affairs, which, as an organization, I have no use for whatsoever. They treat them like retarded children, and to some degree they make them retarded children to the extent that the Indians had been raised for 100 years or more as people under surveillance and "we'll take care of you, but it's not going to be too good, et cetera." The Bureau of Indian Affairs, not the tribes, for instance, leased their lands to cattle growers. Along the river, there was a lot of cottonwood. The cottonwood provided shade for the cattle in summer. It also provided firewood. The river had fish in it. All these things were attributes that went with the land that the Indians owned. I guess I took over well over a million acres for all the dams involved. And the Fort Berthold Indians were a great deal like the other Indians, the Sioux and the rest of them all the way down the river.

The Fort Berthold problem, I think, had been largely solved when I got up there. But the other Indian problems--I met with the Indians--they all had committees with their chief, and they were tough negotiators. Of course, the Congress passed the bill paying them for the land. I remember on one dam, I hired an appraiser who had been on the side of the Ute Indian tribe out in Colorado, and he was a winner for them. So, I hired him to do the appraisals for me on I think it was Garrison. It may have been Oahe, but one or the other. I went up and met with these Indians in their little community buildings. He appraised this one bulk of real estate at something like, say, \$2-1/2 million.

And the Indians wanted \$35 million. And out of the Congress, they got almost what they asked for, which caused me a considerable amount of dismay, of course.

But the thing I didn't like is that this money comes under the surveillance of the Bureau of Indian Affairs. Now this is then, I don't know how it is run now. And so they made a per capita distribution to the tribe of people of \$1,000 each rather than to the elected tribe officers to assure proper control. So, what did they do? They went into town, spent most of it in a week. Some of them bought television sets where there was no capability of using the televisions. Despite that they had been hand-held all the time, no hand-holding was done in respect to how they spent the money. What they got was a very, very small part of the amount that the House and Senate appropriated.

Fort Berthold's was a similar type of fight where the appraisal was a certain amount of money. All these Indian tribes had some pretty smart people--guided, of course, by people in the Bureau of Indian Affairs. Some of the things that happened are unconscionable. I mean, for instance, what was a deer worth? Well, a deer was worth what they were going to get out of the hunter. The hunter came to hunt, and the money he might spend in the corner store and the employment he might make of somebody to skin it and carry it out, and the price of that deer got up to be \$200 or \$300. And so the deer were counted. The deer weren't changed at all. They were just moved somewhere else.

They couldn't use the cottonwood anymore. But, what was the cottonwood worth? Well, the cottonwood was worth what it was worth to provide shade for the cattle, a matter of certain value. It was worth firewood, that had a certain value, and it was worth the board-feet of lumber that was in the thing. All of them were evaluated.

There was a kind of rat that existed out there in the prairies, and this rat went around all the corn-fields and pouched the corn and took it and hid it in little caches, and then the Indians would dig the caches up and have some corn. Now, that

was part of the deal, finally, that was arrived at, not by me, but by the Congress. These things were put down there to raise the price of that land. It was very frustrating negotiating. The Indians sent large groups to Washington to meet with the assistant chief deputy, Chief of Engineers, and myself, and others in arguing their position, and they had tape recorders all down the table. They knew what was said after it was over. They had a record. They weren't stupid, I'll tell you.

Q: You once thought of transferring Oahe Dam from Omaha District to Garrison. Why did you want to do this?

A: I guess that goes back to attempting to reestablish or keep our Garrison District. I think that was the Garrison District. Garrison was getting near completion and Oahe was getting started, and might just as well have them under one aegis up there.

Q: You had some engineering problems. One was at Oahe Dam with some fractured shale material being pushed up. Do you recall that particular problem?

A: Well, there were lots of problems up there that were very important. Shale is a very unstable material, but it's also plastic material and the only thing you'd have to worry about is getting away from the abutments. One of the problems at Garrison, we had to dig out part of the abutment, oh, what's this low-grade coal that the Dakotas are just full of? You know the stuff I mean. It's a low-grade bituminous coal with about two-thirds of the Btu as regular bituminous coal. But in excavating the abutments and foundation at Garrison, this stuff was going to be dug out and, you know, disposed of. But somebody got in the act. It was a very valuable material, so we had to put it in the place where the floodwaters, the waters of the dam, would cover it and save it for future generations.

We had very serious problems with the penstocks at, I think, Fort Randall, where the design was improper and we had to step--

Q: Well, Fort Randall, in fact, was going to be my next question. You tried to put huge iron tubes through

the dam to carry the water flow, and there was some difficulty with the welding procedures on those tubes.

A: Well, the design of those tubes, penstocks, was by a very preeminent, prominent Boston engineering company. The penstocks were very large. I think they were 15 feet in diameter, something like that, and an inch-and-a-half thick. They were carrying huge volumes of water under considerable pressure. And the methodology of welding them had to be followed extremely carefully. I mean, you welded here and you welded there. Nevertheless, in welding them, serious cracks developed. They were going to be reinforced anyhow, I mean, they were going to be encased in concrete with reinforcing in the concrete. To my horror, I discovered that on the plans, the construction plans for these penstocks, the engineering firm had put, "While we've designed these, it should be a requirement of the contractor to confirm that the design is all right," words to that effect. I wanted to sue them because we hired them to design it.

So, we got some university professors in the act, and the reinforcing that was going to be required was greatly in excess of the original design. In order to assure the safety of the penstocks, they were rewelded and the cracks repaired.

Q: Were they rewelded in place?

A: Yes. We put in an enormous amount of additional reinforcing and put in a lot more concrete around them. And the problem was there was so much of the space taken by the big, square bars around that we had to be sure that at least they were far enough apart to get the concrete around them. I got very disturbed that this engineering firm would do that and not be responsible for their design because they gave themselves an out by stamping that thing on all the drawings about penstocks. It was Fort Randall, as I remember.

Q: Do you recall some safety problems at Gavin's Point; poor contractor safety?

A: No. Gavin's Point, the big big day there was the closing of the Missouri River. That was quite a

thing. See, the dam was all built, but the river was being run around one end of it while it was being built. And the time came when the dam was finished, and we had to close the Missouri River and make it go through the outlet works. And we really had everybody in the world there. Secretary Brucker came, of course all the governors came, the Chief was there, and Life magazine. And I had an airplane, a DC-3. It was my second one; Chorpeneing wrecked the other one.

Q: You mean it actually crashed?

A: Yes.

Q: Was there any loss of life?

A: Oh, no. It was just enough to make the plane no good. So, I went around or sent around to various airfields, storage fields, where they had lots of planes--oh, gad, the number of planes that were on these fields was stupendous. I could have had a B-24 if I had wanted it. But, we found another DC-3 and brought it to Omaha, and gradually my pilots started to improve the interior to be a flying clubhouse again. But it hadn't been finished when these people came, and it was hotter than hell. And they all came into Omaha and then we flew them up to Yankton. And the closure started, and it took us close to 24 hours. Well-organized, big caravans of trucks with earth and rock, and just kept piling it in and piling it in, and gradually strangling the river. You always wonder if it's going to succeed, but it did succeed. And the closure was made upstream from the dam so that we could come back in later and put in a competent engineering structure closure of earthwork at the abument end. But it was in Life magazine.

Q: You must not have sent that article in your collection up at West Point.

A: I think I have it somewhere.

Q: Do you recall the Blue Valley ladies?

A: Oh, yes.

Q: Can you tell us about that?

A: Those darlings. Well, Tuttle Creek was the first dam on the Kansas River, and it was the most important dam on the Kansas River, just above Manhattan. And it was our prime project after the war to get started. But, it caused more hassle than almost any other project I've ever had anything to do with. There was total organization of people opposed to it. Part of it being an old cemetery there and they used a little old church that was there, and the farmers didn't want to lose their land. And the organization was so good that they even prepared a movie, and it starts out by showing these heavy military boots walking over the people. That's how the thing starts out. They were showing this film all over. It was obvious that I was the soldier with the boots, though it never quite indicated that.

And, as I told you before, they went out to see President-elect Eisenhower to ask him to vitiate the project when he got in. We finally got some starting money and, as I remember, the next year we didn't get any money. I mean, they were strong enough, but finally we got enough to restart it and finish the thing. And if there's anything that's popular in Manhattan and in that area, it's that lake. Oh, they think it's the greatest thing in the world.

Q: Do you recall a Mr. Stockwell? I don't have a first name, but he evidently was opposed to Tuttle, too.

A: There were people there, and not particularly him, I remember the name, but there were people there who wanted it, but didn't dare say they were for it. They didn't dare because, as I told you, people wouldn't buy cars from them anymore. It was emotional, very emotional.

Q: Were there some property acquisition problems to do with Tuttle Creek?

A: Well, there's always the problem of taking a farmer's land and the amount you pay for it. We didn't have in those days the resettlement thing. I think that's done now, isn't it? If we dispossess people now, we assist them in resettling.

- Q: That's correct.
- A: In those days, that didn't exist, although we did try to do some of that. Hands-on type of government law or policy did not exist at that time. So, they were paid handsomely for their farms. But then of course, and you've got to sympathize with them, their whole way of life was being disturbed and maybe their ability to earn a living was disturbed, though farms existed which they could buy and always could. They knew about these farms. And people who were in houses were paid handsomely for their houses. There was no local organization to assist them. I think the policies we have today where we assist in resettlement are very valuable policies, but I don't think it keeps people from being against major projects.
- Q: Well, what was the primary opposition to Tuttle Creek, I mean, what was the reason for the opposition?
- A: Old landowners, do-gooder types, you know.
- Q: Well, I mean, did they feel that the project was not a valid project, or was it simply that the land was being taken?
- A: Maybe they questioned the worth of the project. See, the Kaw River, as it's called in Kansas, has many tributaries, and there's another dam named Milford higher up the stream--I don't remember any particular problems with that--but the Missouri below Kansas City is a melding of the Missouri and the Kansas River. And the Kansas can produce extremely large floods because it feeds out of the Rockies, too. And I don't think there are any Bureau of Reclamation projects up at the top. They're all ours in Kansas. We had total support from the Kansas City communities, both Kansas City and Kansas, also Topeka.
- Q: Is the Tuttle dam on the Kaw River?
- A: No.
- Q: It's on the Blue.
- A: It's on a tributary.

Q: The Blue River?

A: The Blue River, yes.

Q: Do you recall any particular problems with the Soil Conservation Service regarding Tuttle Creek Dam?

A: Well, the policy or the statements of the Soil Conservation people, and it may be so now, but at least then, is that we can prevent floods by good land practices.

Q: So they felt, also, that the project was necessary?

A: Well, they couldn't have prevented the floods. Obviously they can't because you can't take care of a six or seven inch rain, or the floods from the snow up in the Rockies. You just can't do it. You see, one of the great storm belts in the United States is across Nebraska and Iowa. The most severe thunderstorms I've even been in were here. Did you know that there are more thunderstorms in the Orlando area than any other place in the country?

Q: No, I didn't.

A: Well, it always seemed to me there were more over Iowa. And, of course, we had many tornadoes and hurricanes--not hurricanes, but tornadoes. Weather's a severe thing out in that area, and snow gets awful thick and it melts all of a sudden.

Q: Do you recall any problems with the Souris project in the northern part of the Missouri River Division?

A: That was an irrigation project in the Dakotas, and I didn't have very much to do with it.

Q: Do you recall a problem with something called East bottoms and Williston?

A: Oh, yes.

Q: Could you explain that to me?

- A: I think that's one of my great victories. I think it was a levee project, but there was quite a vocal organization in Williston that wanted things and didn't want other things, if you want to put it that way. And I went up there once and attended a meeting, and they had one of these very vocal types who headed an organization. He was able to talk, and he did talk, and he lowered the boom to the extend possible. And during the course of his presentation, he turned to me and said, "General Potter, it's my understanding that the Corps never makes a mistake. Does the Corps ever make a mistake?" And I said, "We sure do." And that took the wind right out of his sail. And afterwards he said, "You killed my argument when you said that."
- Q: A project you mentioned before in Lincoln was the Salt-Wahoo project, and one person who was particularly interested in it was a man by the name of Robert Crosky.
- A: Yes.
- Q: Can you tell me what the Salt-Wahoo project was and why Crosky was so interested in it?
- A: Well, this is one of divergences of opinion between ourselves and the Soil Conservation people.
- Q: Crosky worked for the Soil Conservation Service?
- A: Well, he was sold on that, and it's not a big stream, but it has quite an effect, I think, on Lincoln. And it was a serious problem to get something done within the constraints of an economic feasibility study. We did work on a plan. The District Engineer in Omaha was very valuable in working that out. It was in his District, of course. The District Engineers did a lot of this hand holding, and I only got in when it was necessary to show my advanced years, et cetera.
- Q: It was a levee?
- A: Canalization and levee project.
- Q: And Crosky felt what, it was not necessary?
- A: I think, I really remember that we had great

argument with the Soil Conservation Service out there.

Q: There was a delay in Fort Peck construction during the time that you were MRD Division Engineer. Do you recall that delay and why it occurred?

A: Well, the only thing I had to do there was the second powerhouse. And it may have been funding, but I really don't remember.

Q: Decatur Bridge in Iowa was a dry land bridge, and it was a subject of rather extensive newspaper coverage.

A: Well, you know, it's fascinating, and to the newspaper man that's a great thing, you know, building a bridge on dry land. And I think it was eventually named the Mormon Bridge. It's north of Omaha.

Q: Yeah, it would be.

A: Do you know that Omaha and Council Bluffs across the river were the places that the Mormons stopped on their trek to the West for at least one winter, maybe two? There's a big Mormon cemetery north of Omaha, which is kept just like a park. They're great people.

Q: Well, was this Decatur Bridge a bridge that resulted from a cutoff in the Missouri?

A: Yes, a straightening in the Missouri.

Q: Are you differentiating between a cutoff and a straightening?

A: Well, it was sort of a cutoff, yes. There was a big meander up there as I remember. We built on dry land and then directed the river under.

Q: Was there a particularly long period of time between--

A: Oh, yes, because as I remember that bridge was privately funded, and the financial geniuses behind that had a great interest in it, of course. And the placement of that bridge, the development of

that bridge as a project took a long time because they were pushing it because they thought they could get a lot of tolls from it, as I remember. And, I remember visiting with them even in New York. We didn't think it was a necessary project, but they had sufficient political clout to get it built. The only thing we had to do with it really was putting the river under it. That was the thing. Putting the river under it after it was finished. They built their own bridge. Whether it was a financial success or not, I don't know, but I don't believe it was.

Q: Well, was there a funding problem that you didn't get the river under the bridge immediately after the bridge was built, was that it?

A: Well, it took a long time.

Q: Yes. So, that's probably what attracted the newspaper coverage.

A: Yes, it took a long time before we got appropriations to move the river.

Q: We already mentioned the Fort Berthold Indians by the Oahe Reservoir. Did you have similar problems with land acquisitions and so forth when dealing with the Cheyenne and the Standing Rock Sioux Indians?

A: Always. They all were the same. Long, long negotiations, appraisals developed as we were required to, and then the overriding of those appraisals by the Congress.

Q: I want to again go through our personality profiles here.

A: Okay.

Q: We've already mentioned some of these. The Chief of Engineers during the time was General Sam Sturgis. What was your impression of General Sturgis?

A: He was a great guy. Really he was. I think, even though he was related to the Pillsburys and pretty well off, you know, he was still a farmer at

heart. He almost acted like a farmer at heart. But, he had a place in, I believe, in Wisconsin that they used to go to in the summers. And one day he called me up and says, "Why don't you and Ruthie get on the plane, come over here and spend a long weekend with us." Very personable and a great friend of mine. I admired him to no end. And because of his looks and approach, this farmer approach, you know--did you ever see him?

Q: I've seen pictures of him.

A: Yes. He was a great success with the Congress.

Q: How about Keith Barney?

A: Keith Barney followed me as Division Engineer of the Missouri River Division. A very fine man. I don't think he's forceful, I didn't think he was very forceful. I never saw him in action, but he followed the policies of the Division and the Chief very well, and I think he was quite successful out there.

Q: Gerald Galloway?

A: Oh, fine guy, just a fine guy. I've known Jerry, oh, all my life.

Q: You know he just died.

A: I know he did, yes. His son is in the Army and doing very well, I hear.

Q: He's up at West Point.

A: Yes. Jerry, a very personable Irish guy, a great deal like Casey in that way, I think. Have you talked to him?

Q: No, I haven't talked to Casey personally.

A: About Galloway, I mean.

Q: Oh, Galloway, no.

A: But a good New York Irishman. A great friend of Tim Mulligan, who died right after the war. Respect him very much.

Q: You made some point, I think, in one of your letters or somewhere along the line, that General Galloway worked out very well in MRD because of his religion as a Catholic.

A: Why I'd say that, I don't know. I don't remember Omaha as being highly Catholic. I really don't.

Q: Lawrence Lincoln?

A: Yeah, there're two Lincolns. Little Abe [Lawrence J. Lincoln] and Big Abe [George A. Lincoln]. Both of those Lincoln boys are top drawer, very top drawer.

Q: Did you have much to do with them?

A: No, not professionally.

Q: Colonel Hubert Miller, Omaha District Engineer?

A: A nice competent man.

Q: Was he a good District Engineer?

A: Oh, I think so. He was a believable type. He went from there down to Texas and did something with flood control down there.

Q: Colonel Ernest C. Adams, Acting District Engineer in Kansas City?

A: I always liked him very much. What happened to him, I don't know. In fact at one time I considered having him come to the [Panama] Canal, I mean that's how much I respected him. A little fellow, but active.

Q: What about Tommy Hayes?

A: Oh, yes. Tommy Hayes is a different type entirely. Tommy Hayes is an extrovert. Likes to run his own show. Is capable, very capable of running his own show. Very thoughtful, sort of a brilliant guy. He finally got to be Division Engineer in Atlanta. Now he heads a big engineering firm out in California. No, I respect Tommy to no end. Tommy is not the greatest subject of supervision because, like myself, he liked to run with his own ball. I

always felt that probably I was the only guy who could do that properly, but we got along fine and we're good friends.

Q: Let's turn our attention to some civilians in MRD. In Omaha District, can you comment on Jerry Ackerman and Ed Soucek?

A: Soucek. Jerry Ackerman, a superb Engineer. Worked very well with Wendell Johnson, who was chief of the engineering division. As a matter of fact he occupied prominent positions in the Society of [American] Military Engineers for several years. A damn good Engineer. Soucek I don't remember that well.

Q: George Evans? He was the resident engineer at Fort Randall.

A: Oh, yes. A very competent guy. I don't know how I can say other than what I'm saying about some of these. He was a rather tall fellow. Did a damn good job, had control of the project, and ran the project.

Q: He evidently was a very much admired person.

A: He was. He was popular as the dickens.

Q: How about Harry C. Pool?

A: Oh, Harry Pool was, as I remember, chief of personnel at MRD. He died while I was there, and he was a very good Catholic. Buried in Kansas City. Likable guy. He was close to retirement when he had a stroke and died. Sort of an upper, long-term employee of the Corps. Traditional.

Q: Yeah. Over 34 years.

A: Traditional type.

Q: Let's turn our attention to some of the politicians you had to work with. Sig Anderson, South Dakota governor. You evidently were on very good terms with him, a first name basis, and so forth.

A: Well, with all of them, I was always on a first name basis. I don't have any other comments on him.

Q: How about Val Peterson, South Dakota governor?

- A: Oh, yes. He's quite a guy. I'm very fond of him.
- Q: Do you have anything bad to say about these people?
- A: I will.
- Q: Okay. Clarence Brundsdale, North Dakota governor?
- A: There's one of the great men I ever knew. He was a real farmer, a real farmer. He got elected because he was a farmer, I think. Of course, North Dakota's a small state population-wise. But we kept up our relationship for long after he finished being governor. He went back to his farm in eastern North Dakota. Oh, I guess we were on as close a relationship as our distance would permit.
- Q: Was he involved somehow with this Williston project? Do you recall some action--
- A: The trouble--the fact that he was governor there, caused him to put the interest to me, I mean the comments to me. I remember that.
- Q: How about Richard Baumhauf? He was a writer for the St. Louis Post Dispatch.
- A: Oh, yes. Usually against everything. A critical writer. I was not especially fond of him. He did a job as a writer, you know. In newspaper reporting, if you write, eulogies about people, the newspaper won't be read. You got to be against things.
- Q: Willard J. Breidenthal, President of the Riverview State Bank, and evidently very much involved with Kansas City flood control?
- A: He really was the leader of the flood control effort on the Missouri River in the lower part of the basin. I can't think of anybody who was more respected. He lived in Kansas City, Kansas, that's where his home was, but the people of Kansas City, Missouri, respected him totally. I used to travel with him. I went to Chicago with him once on a land acquisition problem of the Corps. A country banker in a middle-sized city, but he knew things. He knew how to organize, and the respect he had was nonpareil. I mean, he was great.

Q: A person who I don't really know except by name, Harry Darby from Kansas City?

A: Yes, sir. Harry Darby at one time was an appointed senator. He filled somebody's term. Whether he ever ran for reelection or not, I don't know. He was head of the Cattlemen's Association. He had a steel fabricating business. Extremely handsome and personable. He was the guy who every year when they had the big brouhaha in Kansas City down at the big cattle emporium, whatever it was, he was always the head man there who made the speeches, the emcee, and he kept that up. I think he's probably still alive.

But the people in Kansas City, Missouri and Kansas, were people of influence. I don't know how much you know about that place but Kansas City once had a man named Pendergast there, and he was about as unprincipled as they came. And they finally formed a citizens' association. Now Darby would not have been in this because he lived in Kansas City, Kansas, although I imagine he was a great help. But a man by the name of Jack Gage, who I think was a lawyer too, organized this citizens' association, and they're the ones who threw Pendergast out. They also changed the total complexion of the city council. And they're the ones who hired Perry Cookingham as city manager. And the city turned around from being vice-ridden, and I mean vice-ridden, and a totally political complex with rather questionable ways of operating. You bought your jobs, you bought your contracts, all that sort of thing. But Harry Darby is the type who with Jack Gage, Willard Breidenthal, Massman, and others, turned that city around from the Pendergast era to a city that has grown greatly.

Q: Do you recall Howe S. Davies, President of the Minot Daily News?

A: I went up to Minot several times when I was there. It had to do with the Minot Air Force Base, military construction. I knew him [Davies] quite well. He's quite a guy. Ran a good newspaper.

Q: Was he rough on you?

A: I don't think so. See we had no civil works

projects up there. We weren't taking any land except his airbase.

Q: Brigadier General Joe Foss, governor of North Dakota?

A: I knew him well. He's quite a guy. He was in the Marine Corps--finally got the Medal of Honor, you know. I think he got elected governor because of his war record, but he was a good governor and I enjoyed him to no end.

Q: Was he a bit of a populist type of governor?

A: I can't remember that.

Q: Roman Hruska, Nebraska senator?

A: Yes. He and I kept up a relationship almost until he died. Another farmer type. But a good politician. There was another senator there who I didn't appreciate that much, but I was very fond of Hruska.

Q: [Carl] Curtis?

A: Curtis, yes. I wasn't too fond of him. He was a political animal of sorts. But [Kenneth S.] Wherry was from up there too, you know. Senator Wherry, father of the Wherry Housing Act, you know.

Q: William G. Sloan, Bureau of Reclamation?

A: I met him and conversed with him, but I didn't know him that well.

Q: Chan Gurney, South Dakota senator?

A: Oh, great guy. They were from Yankton. Chan was a real politician, very personable, understanding, well-meant, that sort of thing.

Q: Clarence Cannon, Missouri congressman?

A: He was different. He was not for us generally. He'd been in the Congress a hell of a long time, and he was acid--you didn't handshake him. You didn't flamboozle him. For instance, he kept us from improving the Missouri River under the lowermost bridge, St. Charles, down in that area. He

kept us from improving levees and straightening the river and all that sort of stuff. He was a tough cookie. I didn't get along with him too well. Of course, he was chairman of the Appropriations committee, but I dealt with the subcommittee for Civil Works. We had a chairman the first couple times I appeared there from either North or South Carolina, a real southerner. And I used to think he went to sleep during the hearings. He had a staff that would always feed all the members the most awful questions to ask me. But, one time a question was asked and I thought he was dozing there. I forget my exact comment, but it was a little derogatory of the peanut subsidy. And he said, "All right, colonel, strike two projects from your budget." [laughter]

Q: I would like to know about a man I can't identify, but he appears in your letters, Everett Winter.

A: Oh, yes. Everett Winter was the head of the Missouri Valley Association. That association coordinated all civic activities, with respect to work in the Missouri Valley and on the Mississippi River. They covered the whole basin. A very powerful association, and Everett did a damn good job of operating it, running it.

Q: Ben Cowdery, managing editor of the Omaha World Herald.

A: A very, very dear friend. My two daughters grew up with his daughters. He's visited us here since. A golfer who married a rich man's daughter. The rich man headed the Omaha newspaper, what's the name of it?

Q: World Herald.

A: World Herald. And he was a real tough cookie. You see, Senator [Gilbert] Hitchcock, way back when, had formed that newspaper and Mr. Doorley married one of his daughters. When the senator died, he took over the newspaper and ran it. A very charming guy. His wife died a couple of years ago and he's since remarried.

Q: Does he live in Omaha still?

A: He has a place down on Marco Island, but I think he

lives in Omaha, too. He stayed with us a couple of years ago. Came up over Thanksgiving.

Q: How about Harry Strunk?

A: Yes. Harry Strunk from McCook, huh?

Q: Yes.

A: What a guy. I used to go pheasant hunting with him. A down-to-earth fellow, totally approved of Corps of Engineers work, sort of a spearhead on the Harlan County Dam though it was a long way from McCook. What other interests he had, I don't know, but I remember once he called me up there. They were having an Indian celebration and he wanted me to be in the parade. And son of a gun, I drove up there. That's the time my black chauffeur couldn't find a place to stay and had to spend the night in jail. The sheriff let him sleep in one of the cells during the night. As I say, I used to go pheasant hunting up there with him.

Q: Do you know what his job was?

A: Newspaper.

Q: What was Senator Francis Case like?

A: Something like Curtis.

Q: He had some particular interest in the James River?

A: Yes. what it was I can't remember, but he was a questioning sort of fellow. Not the easiest one to get along with.

Q: Peter Kiewit?

A: Oh, a very great friend of mine.

Q: When did you first meet him?

A: In Omaha. This was a one-man company that became one of the largest construction companies in, I guess, the world, but at least in the United States. He eventually became Assistant Secretary of Defense.

- Q: You did say, though, that you met with Mr. Kiewit while you were director of Civil Works--
- A: Well, I must have met him before that--see, his office is in Omaha?
- Q: Right. So you only became friendly with him when you moved to Omaha?
- A: Yes. How he ran that empire. He ran it like the Corps of Engineers. He had Districts with District Engineers and that sort of thing. He got an enormous amount of work under General Pick building camps, and that's where he really got going. He understood mass construction. He once called me and asked me to come over to his office and he said, "You know, my people think that I should go into a PR program for our company." And he said, "You know, nobody knows about me. I've always stayed in the background," et cetera. "Do you think I should have a PR program?" And I told him no. He didn't need it. In the profession, he was well known. He didn't have to be known in the newspapers and all that sort of stuff.
- Why he took that job as Deputy Secretary of Defense, I don't know. I don't know whether he enjoyed it or not either. He only died a year or so ago.
- Q: Right. Were you keeping up contact with him until his death?
- A: Peripherally. Through friends we'd get back and forth to each other.
- Q: Okay. You indicated to Governor Anderson that the reservoir control center had as one of its purposes serving decision making within the Missouri Basin Interagency Committee Authority. Do you remember anything about this reservoir control center?
- A: I established it in Omaha. I set up a room and had the boys design the controls. It had to be done more or less by telephone. That's where I could keep track of the situation on all the dams on the Missouri. How many gates were open, how much water was coming out of them, how much electricity was being generated. And through that control center, we were able to integrate the whole system. It was

important when water came out of Fort Peck, whether or not it was going to be too much for Garrison, or whether Garrison needed more. The philosophy of the Missouri Basin dams was that water was used five times on the way down to generate electricity, and that we had a bulk of storage in all of these dams. And since the amount of electricity you get out depends upon the elevation of the water in any one reservoir--the height you have gives you more efficiency, of course--that it was essential to monitor these flows and control these flows so that we got the greatest result. And at the same time, maintain the capability in the spring after the floods and after we stored our water, to let something like 30,000 cubic feet a second out of Gavin's Point for navigation and the rest of the river's operation.

So, I established that thing and we got it started. The bureau didn't have something similar, and we had nothing to do with their dams except when one of their dams was letting water out, we had to know about it as far as Fort Randall was concerned. I think it's still in operation, but I imagine it's all electronic now and computerized, and orders can be given easily.

Q: Does it work, I suppose, in association with the Waterways Experiment Station?

A: No, no. Upriver floods we can control pretty darn well with those reservoirs without using spillways.

Q: You wrote to Colonel Barney on his assuming the position of Kansas City District Engineer, that the political situation there in Kansas City was extremely complex, and he should lay low for a bit and learn the ropes, so to speak.

A: You're damn right.

Q: Could you explain what you meant by that?

A: Well, the organization that did away with [Thomas] Pendergast, as I told you, was not totally accepted by the displaced people. And there were several years after I left, of course, when these other people who had run the city the other way were able to elect a city councilman. And for the last two

or three years of Perry Cookingham's tenure as city manager, and he was one of the great city managers of all time, he was the dean of city managers, he was in there by a five to four vote. And then all of a sudden they elected somebody from the one of the districts who were against him, and there was a four to five vote and Perry left. That sort of thing existed there. There were the old-time Pendergast guys in Kansas City who, business-wise, adapted to the new regime and not only had to, but liked it. They found out it was to their good that things were operating on the up and up. So, my warning to Keith was, please find out who the people are and I'll help you all I can before you start taking sides on anything.

Q: Do you recall anything about the Union Electric Company of Missouri getting involved with MRD projects?

A: Yes. Union Electric is in St. Louis, isn't it? And, there was a dam up one of the rivers that they owned and operated but it had flood control capacity, too, and it wasn't too good a dam. And we wanted to build another dam on that same river and that's the one I told you about that, because of dissension, we had to, after I left, change its position and its height and its capacity. But they were involved in that sort of thing because they wanted the ability to generate all the electricity they could hydroelectrically.

Q: Do you recall any particular problems with the building of a veteran's hospital in Kansas City?

A: Oh, yes. At the end of the war, the Veterans' [Administration] was put under General [Paul R.] Hawley, who didn't come up in the hierarchy, and the Corps of Engineers was put in charge of building new hospitals. One that was proposed for Kansas City was to have been close to a 1,000-bed hospital. And I was told to get the design under way. I selected a local architect, but I was requested also to include another architect from, I think, Cincinnati, which I'll never do again. I mean you cannot combine two architects to do one project. There was an enormous amount of dissension between the two of them.

The state of the art in hospitals at that time was

a lot different than it is today. And the Veterans' [Administration] didn't particularly like the Corps of Engineers designing their hospitals. And there were changes and impossibilities of getting approvals. For instance, you may not remember, but air conditioning was invented during the war. And I had proposed that we provide that this hospital be air conditioned. And the VA said, "No, that passes germs around. You'll get germs all over the place if you have air conditioning." But, anyhow, instead of a general hospital with 1,000 beds, as I remember it ended up as a 200-bed tuberculosis hospital. Now, I may be wrong, but it was radically changed, and a very unpleasant experience as far as I was concerned. But, you could not get approvals on various things. We planned so that the nursing stations would see down the corridors, and that was all radically changed because that wasn't the way they worked it. It was a tough job. I won't do another one except with one architect and me in charge.

Q: While you were Division Engineer, you wrote that the Omaha people were so used to working on their big dams that they'd forgotten their planning work. Care to comment?

A: Well, did I say "on big dams," or --

Q: "On their big dams."

A: Oh, well, that refers to the District, I think.

Q: It's referring to Omaha District.

A: Well, every District has a considerable amount of survey reports to do. I suppose you still do survey reports. And those were receiving, as I remember, less than top priority, and the department in charge of them was not well staffed. These reports are the basis of our future, as you know. A survey report finally leads to an authorization.

Q: You felt that they were doing inferior work on the planning side?

A: Well, they were devoting to building the dams and that's a hell of a big job, as you know. Everybody would be centered on that kind of work rather than

on the mundane things. A survey report is not the most fun in the world.

Q: No.

A: It's a gathering of statistics and so on.

Q: Well, was that a comment on one particular division's work, the Planning Division, presumably?

A: Yes, I think so, yes.

Q: This is a philosophical problem as well as an engineering one, but let me ask you it anyway. Could you have any viable amount of navigation on the Missouri River without bank stabilization? How important is bank stabilization to navigation?

A: Before the big dams, of course, navigation depended upon continuing runoff of the river, and sometimes that got awfully low and navigation was very poor. Navigation on the Mississippi was always a success because of the waters of the Ohio and the upper Mississippi and the Missouri put in, though it's not a success this month, is it?

Q: No.

A: The water's way down. That's strange, too. The Missouri River, like the Mississippi, is a meandering river. Naturally it wants to meander. It's all in soil, very little rock, except in very few places, so it meanders just like the Mississippi. It has big ox bows and bends and so on.

Way back when, they started a bank stabilization project on the Missouri River which at least gave the pilots an opportunity to know where the channel was. And that work, I think, continues to this day. Armoring the bank, replacing revetments, and installing groins, piles, you know. But the Missouri River navigation was never too highly successful because of the shallow draft of the vessels that had to use it. It's the big dams upstream that maintained a 30,000-cubic-feet-a-second flow out of Gavin's Point, I think that's the figure, that gave them that security. Whether it's built up or not, I don't know. But we used to get quite a bit of navigation all the way up to Omaha, and

one of the cargoes that always amazed me was molasses, which they mixed with straw and fed to the cattle. They fooled the cattle into thinking the straw is something else. But an enormous amount of molasses used to come upstream to Kansas City and especially to Omaha.

Q: Well, would there be significant deterioration of the river without the bank stabilization?

A: Oh, it would go to pot. And also, you've got to remember that even while I was there and before all the works were completed, the law of the land is that if the river takes a man's farm, he ain't got no farm no more. If he's got one foot left, and then the river builds it back up, he's still got some farm. But if he loses all of his land, he has lost his farm. And if it builds up across the river, he doesn't own that farm across the river. The fellow to whose land the river accreted more land, that's his bigger farm. And the law of that is quite specific. So really bank stabilization has a secondary and equally prominent purpose of protecting the farmers, protecting their land.

Q: You were very opposed to any kind of a piecemeal approach to bank stabilization. Can you explain why you were opposed to this piecemeal approach?

A: Oh, I just wanted to get the job done. I mean, it never looked large on any program because the dams were bigger and the levees were bigger and all that, but bank stabilization was really the life blood of agriculture there along the river. If you don't have any land, it doesn't do you any good, of course. But I wanted to make sure that these farmers were protected.

Q: Was the Veatch report the same as what is called more technically, the "Report on Flood Protection in Kansas River Basin Prepared for the Kansas Industrial Development Commission"? Is that the same? This report was submitted in May 1953. It was signed by Abel Wolman, Louis Rittison, and N. T. Veatch, and for some reason it became known as the Veatch report.

A: Veatch is the engineering firm.

Q: Veatch was the engineering firm. It created a fair

amount of concern, evidently, on the part of the Corps. Can you explain what this report said and what the concern was?

A: It was a denigration of the Corps plan to provide flood control on the Kansas River.

Q: What does it suggest in place of it?

A: Nothing. I can almost say nothing. I mean, it was generated to show that a flood control plan on the Kansas River wasn't necessary. And I think our friend McDonald had to do with that.

Q: What did the Corps do to try and fight this plan?

A: Generated an enthusiasm on our side in the local people.

Q: Was there publicity in the papers and so forth?

A: Maybe for a little while. I may have answered it to some degree. We did not revise our plans in any way whatsoever, and our dams did go ahead. I sort of lost my respect for Mr. Veatch after that because he's a very competent engineer, his firm's still going, but I sort of believe in the purity of the profession. And our Kansas Basin report, of course, subject to analysis and comment, but it couldn't have been totally wrong, which is more or less what that report said.

Q: General Potter, you had the opportunity last night to look at some letters I gave you that go back to your days as MRD Division Engineer. I'm wondering if any of those letters may have jogged your memory on some issues?

A: Oh, minor things now, but major things probably then. There was a considerable argument with the Asphalt Institute as to using asphalt on runways for the major bomber commands of SAC and other Air Force installations. It's readily recognized that jet fuel dissolves asphalt, and the problem was to make sure the runways were [adequate] at all times. The resolution came, as I remember, that we would make the ends of the runway--from where a plane was taking off and when it was discharging maximum amounts of fuel--out of concrete, and the middle section of the runways out of asphalt. All

pads around the hangars and so on had to be of concrete because that's where the fuel was spilled in loading. It was one of those things that had to have both sides presented to you and, of course, the Air Force, I think, made the final decision to build them in the way we described.

The other one my memory was jogged on a bit, was the Souris project, which was a big irrigation project up in the Dakotas. It impinged upon the Missouri Basin plan because water would be required for that irrigation. I know it had a lot of argument going on about it for several years. What the solution was, I really don't remember except to the Bureau of Reclamation and the farmers up there, it was a very important project.

Q: Do you recollect anything more about this controversy with General Itschner about relocation?

A: Oh, yes. You can readily understand why I became upset. When we build dams, we make reservoirs, and those reservoirs go up the tributaries. And sometimes, in some cases quite a long ways. And in doing that, in filling the reservoir, you, of course, do away with roads that crossed what used to be pristine farmland and also you disrupt roads that go across those tributaries. It always has been the policy of the Corps and the government, the Bureau of Reclamation and others, to relocate transportation facilities so that people can still communicate easily. Now, the argument came from the fact that in many cases these roads, and especially the bridges, and the argument was about bridges, were of let's say 20-foot width, which was an acceptable width way back when they were built. But the government from time to time widens bridges to facilitate traffic and cut down accidents and all that sort of thing, and when we came to relocate bridges around the reservoirs on the upper basin, a policy was enunciated to which I strongly objected that we would pay for a bridge of similar width. Well, that was, to my way of thinking, asinine because the bridge would not be accepted by the government, what is it--the Department of Transportation, whoever it is that has to do with roads, federal Bureau of [Public] Roads, something like that--and because they would not accept it as a bridge on a federal road or on a federally supported maintained road. The bridges would have

to be up to the standards that existed. And so I objected strongly to the rather narrow view that was enunciated to only pay for the narrower bridge that existed.

Q: Oh, I see. Did any of those letters bring back any more about Tuttle Creek, that controversy?

A: Oh, it was an ongoing and bitter controversy until the reservoir really got going. And, as I told you, the people there were just happy as a dickens with the reservoir as a playground. And it brought a lot of business there, you know, motorboats and restaurants and all that sort of thing. It's an admired facility in the Manhattan area of Kansas, as is Milford and all the other dams up the Kaw River.

Q: What would you say, General Potter, were your biggest challenges as Division Engineer?

A: Well, there are several that any Division Engineer has to face up to. Especially in the Midwest, the Corps of Engineers is an important organization in every state upon which it impinges. As a result, it is necessary to deal with and relate to and hand-hold the politicians, not only the federal representatives and senators, but also the governors and the governors' departments. So, a large part of the business of a Division Engineer is travelling and meeting with those people, finding out what their problems are, trying to ameliorate any discussions that are taking place. I guess you would call that the political aspect of being Division Engineer.

The technical aspects are not especially severe because the Corps of Engineers is one of the most remarkable organizations that exist in this world. And the method of reacting to the Congress for survey reports which, in some cases, lead to authorizations of projects and then to appearing before the Appropriations committee, the Bureau of the Budget, getting approval by the President for the year's budget, and building the project--they are more or less routine. Of course, there are always problems technically that you'll discover in foundations and things like that.

Q: On 6 September 1956, after you had already left MRD, you wrote a letter to General Pick, who had

also retired by then, and it concerned General Itschner, who had just been appointed the new Chief of Engineers following Sturgis. And you write, "I am sorry that my predictions and feelings about who would be the next Chief came true. I feel that with Emma's great propensity to look at details some of our broader problems might go by the board. It will be very interesting to see who was selected to fill the important job of deputy on both sides of the shop. Of course, you know, that Jack Person is moving in the Civil Works. I do feel that Jack and Emma might come to the parting of the ways someday since Jack does have a rather progressive view towards how fast and far we should go in our various programs, and, of course the squabble with Agriculture is going to get much more severe with their new bill."

Who was your choice to be Chief of Engineers, do you recall?

A: Of course, I was not, nor was Pick, in the selection process. The only reason I would express any feeling one way or another is that when the time comes to select a Chief of Engineers, all the senior officers of the Corps have their candidates and sometimes feel sad when their candidate is not selected. I can't remember who I would have liked to see Chief, but among the people who were very competent would have been Robby Robinson, who was Sverdrup's deputy in the Pacific. Personally, he and I were great friends. Itschner was, and, I presume, still is a detail man. He had to go into the details of design of dams, the size of bolts, et cetera, and every night when he went home they could hardly make a briefcase big enough to carry. He reviewed everything as if he were running every department. He, I don't think, is what you'd call a staff-oriented person. A normal organization, the kind that I like to operate, is one where the head of the organization selects his staff officers, delegates authority to them, receives their reports, and listens to both sides and then makes a decision. But, I've worked with and for people on the other side of the picture who have to know every little detail. Despite these personal characteristics, I feel that Itschner was a very competent Chief of Engineers.

Now, he did balance his organization by having Jack Person in Civil Works. Jack was an outgoing fellow. A proper type of officer to have in Civil Works, where you are dealing with politicians regularly, and by politicians I mean those people who have an interest in civil works projects.

I don't remember who he had as the chief of Military Operations. I would say, I was probably a little extravagant in expressing my dismay because I had nothing to do with it. But I did always keep in contact with General Pick. As you remember, the policy requires that the Department of the Army will send up three names in order of priority, and the President can select any one of those. When Pick was selected, the Army sent up three names and Truman would send them back because it didn't include General Pick. And finally it was made quite obvious that they were not going to get a Chief until Pick's name was on the list. Whether it went up there in last place, I don't know, but anyhow he selected him. Of course, Pick was in the selection process for Sturgis, not Itschner.

Q: Did you confide in General Pick quite a bit and did General Pick confide in you?

A: Yes, in everything. during the first six months that he was Chief, the real power structure in the Chief's office was General Pick, Craig Smyser, and myself. And we stayed late and met often; we were in the Chief's office frequently. We would discuss things that were coming up or that were up and arguments that were going on. We would confide in him and give him our opinions. It was a very close-knit operation at the beginning. Craig was his executive assistant sitting outside his door. And this was a very unpopular thing with many officers in the Corps, of course.

Q: Before we leave the Missouri River Division here, do you have any concluding observations or anything that you may have left that you want to put into the record?

A: Oh, I was immensely proud of the organization that was there, and especially of Wendell Johnson, who, by the way, had been General Stratton's right-hand assistant in Europe during the war, and had left, I

believe, the Missouri River Division to go over there and then had come back as chief engineer of the division. Very astute, calm person, as I said the other day, it would be a good idea for you to see him even though he's somewhat incapacitated from a stroke.

Q: In May 1956, you were appointed the governor of the Panama Canal Zone for a four-year term. I wonder if you could give us the background to that appointment, and also if you can tell us how your experience with the Corps may have been of help to you as governor of the Panama Canal Zone?

A: Well, I received a call one day from General Sturgis saying, "How would you like to go to the Canal Zone as governor?" Normally, the governor--going up to being governor was a course of going through the chairs. In the past, an Engineer officer would go down there as assistant Engineer, then Engineer, then lieutenant governor, and then governor. Those officers served generally for a three-year term, especially the lieutenant governor. So there was always a choice of people. I had never been in that hierarchy, and was of course somewhat surprised. But, my predecessor had apparently had some problems. His term was up, by the way. But he had some problems, and Sturgis wanted somebody down there who he knew and knew how he would operate. So, the governor of the Canal Zone has always been an officer of the Corps of Engineers up until the treaty. And I was just one of, I forget whether I was thirteenth or fourteenth or whatever, but I was appointed by President Eisenhower and began my term after being sworn in at Washington. I'd gotten my two stars, oh, almost within minutes before that. I mean, maybe a week or so before that. So, when I was sworn in, I was then a temporary major general.

Q: You were also serving concurrently as president of the Panama Canal Company?

A: The job has two hats.

Q: Could you explain for us the way in which the government and the Panama Canal Company worked there together?

A: Let me go back and sort of round out the whole pic-