ORAL HISTORY INTERVIEW

Robert J. Pafford

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STATUS OF INTERVIEW:
OPEN FOR RESEARCH

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Interview Conducted and Edited by:
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Senior Historian
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ROBERT J. PAFFORD

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The transcriber and editor also have removed some extraneous words such as false starts and repetitions without indicating their removal. The meaning of the interview has not been changed by this editing.

While we attempt to conform to most standard academic rules of usage (see *The Chicago Manual of Style*), we do not conform to those standards in this interview for individual's titles which then would only be capitalized in the text when they are specifically used as a title connected to a name, e.g., "Secretary of the Interior Gale Norton" as opposed to "Gale Norton, the secretary of the interior;" or "Commissioner John Keys" as opposed to "the commissioner, who was John Keys at the time." The convention in the Federal government is to capitalize titles always. Likewise formal titles of acts and offices are capitalized but abbreviated usages are not, e.g., Division of Planning as opposed to "planning;" the Reclamation Projects Authorization and Adjustment Act of 1992, as opposed to "the 1992 act."

The convention with acronyms is that if they are pronounced as a word then they are treated as if they are a word. If they are spelled out by the speaker then they have a hyphen between each letter. An example is the Agency

for International Development's acronym: said as a word, it appears as AID but spelled out it appears as A-I-D; another example is the acronym for State Historic Preservation Officer: SHPO when said as a word, but S-H-P-O when spelled out.

Introduction

In 1988, Reclamation created a History Program. While headquartered in Denver, the History Program was developed as a bureau-wide program.

One component of Reclamation's history program is its oral history activity. The primary objectives of Reclamation's oral history activities are: preservation of historical data not normally available through Reclamation records (supplementing already available data on the whole range of Reclamation's history); making the preserved data available to researchers inside and outside Reclamation.

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For additional information about Reclamation's History Program see:
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Oral History Interview
Robert J. Pafford

Storey: This is Brit Allan Storey, senior historian of the Bureau of Reclamation, interviewing Robert J. Pafford, former Regional Director of the Mid-Pacific Region of the Bureau of Reclamation, at Sacramento, California, on May 25, 1994 at about 1:30 in the afternoon. This is tape one.

Mr. Pafford, could you tell me please where you were born and raised and educated and how you ended up at the Bureau of Reclamation.

Early Life

Pafford: Well, that can be a very short story or a kind of a long story. (Storey: Take your time.) I was born in what was a small town in central Kansas called Salina, S-A-L-I-N-A, October 30, 1909. I stayed there all through grade school and high school. Did quite well, incidentally, in high school, winning some state contests and general scholarships and so on. Then, I was very interested in radio and electronics and electricity, so I went to Kansas State University in Manhattan, Kansas, taking electrical engineering. But I wasn't interested in being just a hired hand, so I specialized in business and management courses too. I had in mind eventually being one of the high officials in the utility company, or in an electrical manufacturing company.

I graduated in 1931. In a tour, visiting different companies in the electrical business just before that, I secured a position. In fact, I'd secured it the November of 1930. And most people, by February or March of '31 had been told the jobs weren't there any more. I graduated on May 29, 1931, and on June 2, I got

a wire from San Manuel Electric that "we are so sorry, you have no job with us." They had a real rough Depression back in the early 30s. I ended up being assistant manager and manager of a swimming pool in my hometown the first year (chuckles), so I'd have a job. Then because of the business training I'd taken, the Department of Commerce hired me to conduct a business census in the northwest quarter of Kansas, which I did. Started federal service then. That job ran out at the end of 1933 or what, I guess.

Meanwhile I had applied [for] the Civil Service Exams, electrical engineering job, lots of places. I got an inquiry to go to work for the Corps of Engineers in Kansas City, Missouri, which I did, as an electrical designer. I worked on electrical design for the electric power supply equipment for Fort Peck Dam in Montana, until we had that design all done, which was the end of 1933.[1] The Corps was expanding other offices.

Does my voice come through clear or not?

Storey: Your voice is coming through great. I wish I had a big one like that!

Hired by the Corps of Engineers

Pafford: Oh! The Corps of Engineers was building up other offices. I had the option of going to Huntington, West Virginia; or to Albuquerque, New Mexico. And I found a friend of mine in high places in Washington, and he said, "Huntington is a good job." So I took that,

1 Authorized in 1933, Fort Peck Dam was the first U.S. Army Corps of Engineers' dam constructed on the main stem of the Missouri River near Glasgow, Montana. The dam was completed in 1940 and serves as flood control facility and produces hydroelectric power.

moved back there in early 1934. That office was undertaking the design of a flood control and hydropower dam near Hinton, West Virginia. Now it's called the Bluestone Dam, but it was called the Hinton Dam then. I worked at that for the better part of a year. Then we started having some water supply problems. And then in 1936 there was a terrific flood back there, and all of a sudden the Corps' mission became flood control. We were doing navigation and hydropower (chuckles) before then. Then, there was nobody knew what you did for floods. They didn't practice–the way it was set up in those days–I mean, the way it's done now, at all. All you did, if there was a flood, you built something big enough to stop that flood. You didn't worry whether you could have a bigger flood or a littler flood or anything else. So like mad, we were designing dams, flood control, flood walls, and levies. That flood in '36 went about twenty-five feet higher on the Ohio River, the Kanawha River, New River, than any flood had previously. Of course the previous flood history is only about (chuckles) thirty or forty years! Some of it was fifty years, back to the Civil War days, but not much. And they didn't have anybody that knew anything about hydraulic design–how much water to plan on there being in rivers, or anything else.

Somebody had the bright idea, well gosh, water is just like electricity, it has to run through conduits and rivers, like electricity has to run through wires. Why don't we take some of these electrical guys and get them around to different schools and get them trained and let them learn something about handling water? So I got put on *that* circuit, which was interesting. (clock coo-coos) So after a lot of help from various university professors that knew something about hydrology, why floods happen, why droughts

happen, and also about the magnitude of past events and water, I and about five other people in the Corps, in the Ohio River Division it was called, became–because there was nobody else to do it–became flood control experts. And we *were the* flood control experts (chuckles) because nobody else knew anything about it! (Storey: Uh-huh.) We designed, finally . . . We thought a little bit beyond that flood that had just happened, thought a little bit about what *could* happen, and designed what was called the Flood Control Project for the Ohio and Mississippi rivers, which was grossly an exaggeration! It wasn't that good. (chuckles) At least it was a start towards doing something for it.

Missouri River Basin

Then on the Missouri River basin people started getting interested wanting to going on for water control. And people asked me to transfer out there. Since I was one of the experts in the area, we built the business up, I should come out and help them be experts! (laughs) So I transferred out there in 1942. And boy did we get a clobbering in 1943! There was a snow melt flood, and it was by *far* the greatest flood that ever happened on the Missouri River and its tributaries. And the Corps of Engineers got real interested in doing something about that.

Meanwhile, the people up in Montana and the Dakotas and Wyoming had woke up to the fact what people further west were doing with irrigation and decided their agricultural economy, which was good in wet years and was horrible in dry years, that maybe they should do something about this to stabilize that. So a fellow named [William Glenn] Sloan with the Bureau of Reclamation Office in Billings, Montana, and a general named Louis Pick with the Corps of Engineers in charge of the Missouri River Division, had an idea, "Why couldn't we come up with an overall plan that would be real popular politically, if it'd take of irrigating the West where they need water, and take care of floods down below where they *don't* need it."

Pick-Sloan Plan

So in 1944 they put together quite an elaborate plan, which became the basis of the present programs in the Missouri River basin, which is one of the largest ones in the country, and took it into Congress. Congress said, "Boy, this just gives these people out west the water they need, gives these people down south in Missouri and Nebraska water they don't need." So they put together what at that time was quite big. As I remember, it was somewhere between one and two billion dollars worth of work, all at once, to be authorized, which had *never* happened before, and it was called the Pick-Sloan Plan, named after Pick, P-I-C-K, the general, and Sloan, S-L-O-A-N, the Assistant Regional Director at the Bureau of Reclamation in Billings. So we proceeded with . . . My job, by that time, was the hydraulic and hydrologic engineering, for *everybody* on that plan–the irrigation, the flood control, navigation, hydroelectric power.[2] And I was in charge of the planning of that type of work, which I enjoyed real thoroughly. As always, there had to be some give and takes. Some people couldn't have everything they wanted, other people couldn't have anything *they* wanted. It took a lot of horse trading and compromising, explaining. That was my job in a lot of places, traveling all over Montana to Missouri explaining to people what we had in the plan. And I was fairly successful at it.

Well, I stayed with that job through 1962. Meanwhile, the fellow that had been the Assistant Resources Director of South Dakota, who had seen me around explaining to people what was going on around there, or *could* go

2 Authorized in 1944,the Pick-Sloan Missouri Basin Program is a joint effort between the Bureau of Reclamation and U.S. Army Corps of Engineers. In general, the program is a multi-purpose project providing flood control, irrigation water, recreation, navigation, and fish and wild life benefits throughout the entire Missouri River basin. The corps was responsible for flood control and navigation along the main stem of the Missouri River; while Reclamation constructed irrigation and hydro-power facilities along the rivers primary tributaries.

on–Ken Holum, H-O-L-U-M, was his name–when the administration changed back in '72, he became Assistant Secretary of Interior, Ken Holum, under Stewart Udall at that time.[3] Well it turned out they were developing a problem out here. They had a good program in the Central Valley Program.[4] It was based on Shasta Dam. It was a water supply program. It was supplying it to the northern part of California. People down south wanted water too: both for agriculture and the L.A. area, like always, wanted water.

Joining Reclamation

Well, the state came out with an idea that they'd just take over this program, Central Valley Project, through the Bureau of Reclamation that it had, build on it. The Bureau had only had a couple billion dollars in it, wanted to just take the thing over and (chuckles) get it for free. Holum said, "Uh-oh, Bob Pafford's needed out there to look out for our interests. He's sharp enough, he can figure out what the state needs, what we can afford to give, and what we can do without." So he had me appointed Regional Director out here, starting in January 1963. It was quite an interesting program.

Storey: So you came directly over from the Corps?

Pafford: From the Corps of Engineers in Omaha, the

3 Mr. Pafford is mistaken when mentioning 1972 as the year administrations changed. Kenneth Holum served as Assistant Secretary of the Interior Water and Power Development from 1961 to 1969, under Secretary of the Interior Stewart Udall, during the Kennedy and Johnson administrations.

4 The Central Valley Project in California extends from the Cascade Range in the north to the Kern River in the southern end of the San Joaquin Valley. The CVP serves farms, homes and industry in California's Central Valley as well as major urban centers in the San Francisco Bay Area; it is also the primary source of water for much of California's wetlands. In addition to delivering water for farms, homes, factories and the environment, the CVP produces electric power and provides flood risk reduction, navigation, recreation and water quality benefits. For more information see Eric A. Stene, "Central Valley Project: Overview," Denver, Bureau of Reclamation History Program, www.usbr.gov/projects/pdf.php?id=253.

Missouri River Division, which was a first. And actually, it worked pretty much to my advantage–confused people! "Why the devil should they get *this* guy from an opposition camp?!" Because they were regarded as rivals, the Bureau of Reclamation and the Corps of Engineers. "Why should they get this guy? Either they're dumb as they are, or he's pretty smart. Now which is it?" Turned out, more than anything, I was a different man. I'd take the trouble to learn what people were really interested in–both sides of a problem–and see if there weren't some elements of common interest to both of them, which there *is* in practically *all* relationships with people.

It turned out, in my case, it worked out real well. Got along well enough with the state that they knew they didn't have the engineering expertise the Bureau of Reclamation had. They need a big dam, the San Luis Dam, down in the San Joaquin Valley.[5] So they paid *us* the money, instead of taking over *our* project, they paid *us* $120 million of their share of the thing to have us build it for them. And they were very happy with it. And we helped them set up their people and operate it, because we had people out here knowing how to operating things for a long time. Once again, there was a need to expand *some* of the facilities that the Bureau of Reclamation had out here.

And once again, a flood came along on the American River. Let's seen when was that? I'd been here about two years. And it was a three-day rainstorm that made the flood. If it would have rained another twelve hours, two-thirds of the city of Sacramento would have

5 San Luis Dam, also known as B.F. Sisk Dam, was constructed in 1967 to provide supplemental irrigation water storage for the federal Central Valley Project and municipal and industrial water for the California State Water Project. Located 12 miles west of Los Banos, California, the dam is a 300-foot high structure, with a reservoir capacity of over 2 million acre feet. For more information, see Robert Autobee, "San Luis Unit, West San Joaquin Division, Central Valley Project," Denver: Bureau of Reclamation History Program, www.usbr.gov/projects/pdf.php?id=109.

been dunked, completely. Came within just *inches* of going over what flood protection they had. The idea on that was, "What could be done about this?" Well, that big flood came down the American River out here, and there was an opportunity to put in a large dam that would make a lot of hydroelectric power, that would help pay for a lot of things. It would have stopped *that* flood, although not other floods, necessarily, bigger. And also, it would have supplied some more water. They were starting to get a little bit short of water here in Sacramento, and also in the San Francisco area. So that one became Auburn Dam, which later got killed politically, because it would have . . . Actually, it'd have cost a heck of a lot for what you'd get out of it, engineeringly. And it would have messed up a few local historic areas–none of it major significance in California history, but something for politicians to yell about.

But at the same time, I got caught in several other deals that were interesting. Over on the east side of the Sierra Nevada, there was the Truckee and Carson rivers to supply water for irrigation in western Nevada–also supply a historic lake called Pyramid Lake, near the California-Nevada border. Then Indian projects–an Indian reservation there, and they're horribly poor, so they hope if they keep adding that lake up, maybe they'd get enough people to come in and fish to help their economy out. They were about as hard up as any Indians you read about anywhere, for having very poor resources, poor access to food, and coming into a dollar economy, which the country was, no source of dollars to speak of.

So that started a running feud for about ten years over there, too, that I got mixed up in, between the irrigators, who *had* established a fairly successful project, who would go out of business if the Indian lake was taken care of; and the Indians who felt if they had to have a lake, it might or might not do them any good, but it was the only chance they had. So I spent quite a bit of (chuckles) time on that too, and worked it out fairly happily, so that everybody

got three-quarters, at least, of what they wanted. And I think the Indians were still a poverty case, they know it's not the irrigators' fault.

There were other problems up north. We were starting to get the problems of interference with the fish resources. We had known the salmon in the Sacramento River was *terrifically* important, so we'd taken care of *it*–all the flow programs and everything else–except possibly the location of a few dams. But that turned out to be–well, that's still going on, of course. It turned out to be quite a problem. I think, as far as our works in Reclamation, we were able to take care of eighty-five or ninety percent of the problems with fish. There were going to be problems, but they were a lot less than they would have been. And I spent a lot of time running around on that.

Well, anyway, that's how come I got with Reclamation. After I'd completed my fortieth year with the government, I decided that was long enough. So in June of 1973, I retired. And I pretty well–I stayed active in the water business for four or five years as a consultant, and as different acquaintances want me to take on some project for them, I decided to heck with it, I retired, let's retire. So there we are, retired.

Storey: Okay, I'd like to go back and start with your education in Salina. Why did you become interested in electrical engineering? How did that happen?

Early Interest in Radios

Pafford: I was a kid, I just got interested in radio. Got a little radio and got interested in radio. It was obvious [to me], if you're going to have a radio and make it work, it had to have electricity. That was interesting. I was interested in automatic things. Vacuum sweepers had showed up, were beginning to show up, like the old Hoover. They didn't work worth a damn. Obviously, you needed something better. I was thinking, "Why can't we build a better one?

Well, let's learn how, and then do it!"

Storey: And so then you went to Kansas State University? (Pafford: Yeah, right.) And became an electrical engineer?

Pafford: Yeah, and took electrical eng[ineering]–well, with an emphasis on management more than the technique of electricity–both–they have a good program there, though. They have a lot of different options you can take, depending on what you think you want to do the rest of your life. I didn't want to connect wires. I wanted to do that *some*, but primarily I wanted to tell people *why* they should connect wires and to go do it.

Storey: Were there any particular professors that influenced you there?

Pafford: No, I don't believe so. They had a good staff.

Storey: How did you go about finding a job in those early days of the Depression? Even though it fell through, what did you do?

Difficulty in Finding Employment during the Depression

Pafford: Well, I'd been on a tour. The university provided tours to people to go review any industry, any occupation they might be interested in. Go sit down and visit with the management people, go in their factories, spend a couple of weeks with any particular companies you were interested in, to see whether there was something there that interested you or not. That was one of the good things, the university there, they let you see what was going on in the real world and decide what part of it you were interested in.

Storey: And they actually paid for that?

Pafford: Ah, they arranged so it could be done [at] very, very low cost. Students had to pay for it. They did the arrangements. Students usually go in groups. They'd take a group of a half-dozen or a

dozen at a time, that had common interests. But I'm *amazed* at how reasonable it was done. You could do a lot of traveling and eating and sleeping on about ten dollars a day. (chuckles) It'd be five hundred dollars a day now (laughs) the same quality.

Storey: Where did you go look?

Pafford: In East St. Louis, Sangamo Electric where I looked the most. Otherwise, I thought I might be interested in–I forget the name of the company–in Chicago, and went there too. They were the only two major trips I took. The one in East St. Louis, in Illinois, Sangamo Electric Company (phone rings) is the one that offered me a job. Pardon me just a minute.

Storey: Am I hearing you say Sangamon?

Pafford: Sangamo, S-A-N-G-A-M-O, Sangamo Electric Company.

Storey: And of course that didn't come through, so you ended up at the swimming pool for a period of time.

Pafford: Yeah. Well, that didn't come through because the day after I graduated (laughs) I was practically getting ready to pack up and go back there. So I went back to my hometown and got a job with the local swimming pool. I always like to swim, and was well acquainted with the people around there.

Storey: What did your dad do for a living?

Father's Occupations

Pafford: He was a rural free delivery carrier with the Post Office Department when I was first a little kid–my first memory of him working. Then he became bookkeeper with a brick manufacturing company, Salina Brick and Tile Company, which he did quite well at. The fellow that had been manager passed away, so he became manager of it–lasted for quite a few years. After

that, when the business started getting pretty bad [during] the Depression of the 30s, that business, just like anything else, there was no construction going on, no business. He had an opportunity to take a competitive exam for the Post Office Department, and believe it or not, competitive exam for being postmaster. That's how small a town it was! (laughs) He could just go see Uncle Joe and he'd pat you on the back and get you in. So he became a postmaster there for a few years. By that time, he was getting old enough. He retired.

Storey: Did your family put you through school?

Pafford: Yes.

Storey: Now, when you went to the Corps in 1933, were you working in Kansas City, or were you actually working out at Fort Peck?

Power Projects for the Corps

Pafford: I was working in Kansas City. That was the office that did the design of the work construction that took place at Fort Peck.

Storey: So you were doing the design for the powerplant there?

Pafford: That is a tremendously large pile of dirt that was dredged in, hydraulic dredging. And I was working on the power supply to supply the power to pump the water and gravel in the dredges. Took a *tremendous* amount of power. Took about five times as much power as was used in the whole state of Montana at the time.

Storey: So it was hard to get it, I guess?

Pafford: Well, we moved it in from western Montana where they had large hydroelectric projects, built a hydroelectric project, moved it 250 miles.

Storey: Were you involved in designing that project, the hydro project?

Pafford: No, my job was to get the power from it to

where they could use it to pump gravel fill for the dam, which was quite a unique undertaking, that far, at that time. The first time that much power had ever been moved before.

Storey: How much power was it?

Pafford: Oh, I forget. There was somewhere between a hundred and two hundred thousand kilowatts.

Storey: Now when you went to Huntington and you were working on Bluestone Dam, was that the same kind of thing?

Pafford: No, that was a variation. Actually it was more planning how big a power installation could you afford to make, how much power would you get out of it?

Storey: What was installed at Bluestone.

Pafford: Yeah, how many kilowatts of power units should be installed. And if you installed so much, how much would that cost? And you had the water supply that's in the river, how much power could you make, and how much could you sell it for? To see whether . . . Well, there had to be the proper size somewhere. And it was based on cost and benefits.

Storey: Right. Okay, now when they decided the electrical engineers could figure out how water flowed through the channels, and they sent you for training, how much training was involved?

Learning Hydraulics

Pafford: Oh, it was intermittent over the course of about three years. There was a young hydraulic engineer, Einstein's son–young Einstein was out here at the University of California. Some of us came out and sat down with him for a month. He came and visited us. There was a fellow at the University of Minnesota, Lorenz Straub who knew as much as anybody in those days, how much water would run down a channel and how

high it would pile up.[6] And there were a couple of economists that thought they had ideas that if something got dumped, what would be the total cost eventually? In other words, the flood damages. The reason they took us around on that, there was nobody in the country that had been doing any of it. I think somebody figured (laughs) there's a commodity and it runs through something, and something happens.

Storey: How much time altogether do you suppose you spent in training in those three years? I've heard a couple of months [inaudible].

Pafford: Well, it was a combination of . . . It wasn't really like classroom training in college. It was a combination of having a specific job to do and then sitting down and working at that job with whatever expert opinion you can get to help you know what way to work on it. Oh, I guess I spent probably a third of my time with people that could give good tips of what to do.

Storey: What did you learn that maybe surprised you, or was unexpected when you were doing this? What did you learn about flooding?

Pafford: I turned the apparently obvious thing into something specific that you could put numbers on, that you could measure quantities or results.

Storey: And how did you verify those?

Pafford: By going back where there'd been floods or something like that, figuring out with such record as you had, what *should* have happened, and then seeing whether that's what really happened. (Storey: I see.) If it did, it went fine.

Storey: You were working on historic data. (Pafford:

6 Lorenz Straub founded the St. Anthony Falls Laboratory in Minnesota in 1938 and was a leading researcher in river hydraulics. For more information, see Open Rivers, Rethinking the Mississippi, "The Lab on the River: The St. Anthony Falls Laboratory at the University of Minnesota," http://editions.lib.umn.edu/openrivers/article/the-lab-on-the-river-the-st-anthony-falls-laboratory-at-the-university-of-minnesota/ (Accessed June 2016).

Right.) Was it hard to get historic data to work from?

Pafford: Ah, not if you were persistent. I'd get people who were good interviewers with people to find out "what went on in their own back yards," so to speak. And some people weren't good at it, and some people were *extremely* good at it. Go around, interview people, and find out when some water got so high. That way, you do physical surveys and find out *why* it got that high, by figuring the cross-sectional area that carried water, the relative elevation of the land as it got flooded, and so on.

Storey: How many people were involved in all of this?

Pafford: Well, that depends on where. We had, on the Ohio River, we had, I believe it was five different districts, and there was a couple on each district, as occasions came along. They were all on one . . .

END SIDE 1, TAPE 1. MAY 25, 1994.
BEGIN SIDE 2, TAPE 1. MAY 25, 1994.

Storey: So altogether maybe a half-dozen people?

Pafford: Yeah. I mean that I was . . . in cohorts with, traveling back and forth, exchanging information. One of us think of something and share it with the others. Had get-togethers every couple of months–whatever we had discovered new, pass it on to the others.

Storey: So there wasn't one person in charge of a team or something like that?

Pafford: It was more a collective effort.

Storey: And out of that collective effort came the flood control plan for the Ohio and Mississippi?

Ohio and Mississippi Rivers Flood Control Plans

Pafford: Right. Well, the Mississippi was an add-on. The Ohio River flood made quite a dent on the

Mississippi. The plan wasn't really for the Mississippi River, it was just public relations, salesmanship. (Storey: Oh, I see.) If the flood on the Ohio River had been handled, there would have been much less of a problem on the Mississippi. The actual works involved, outside of a dam or two up in Minnesota, involved nothing in the Mississippi that wasn't in the Ohio Basin.

Storey: Do you remember any of the elements of that plan?

Pafford: I don't now, really. There were a long series of levies in rural areas, a whole series of flood walls in towns anywhere from Pittsburgh down to . . . oh, practically the mouth of the Ohio River. Fifteen or twenty.

Storey: You mean dams like maybe Tygert, for instance?

Pafford: Yeah, Tygert, I think, was in on it, was one of them. Bluestone, of course, was in on it too.

Storey: Do you remember the date of the report?

Pafford: No. Let's see, it would . . . have been around 1938 or so, within a year of 1938.

Storey: Was there an author on the report, or a series of authors?

Pafford: They were put out by the Corps. The series were called House Documents. H-D I forget the H-D number on that. But there were . . . The Corps of Engineers Archives would be able to find that one.[7]

Storey: Yeah, in the Pershing Building. We can do that easily.

And then they wanted to move you out to

7 Mr. Pafford may be referring to House Document 306: *Ohio River: Letter from the Secretary of War*, H.doc. 306, 74th Cong., 1st sess., August 23, 1935 (Washington, D.C.: United States Government Printing Office, 1935).

the Missouri River, in '42. (Pafford: Right.) That would have been right about when the Pick-Sloan Missouri Basin Program was being (Pafford: That's when they were starting it. That's what they moved us out for.) created, wasn't it?

Pafford: To get started on putting it together.

Storey: Tell me about your involvement in that.

Planning for Resources Development on the Missouri River

Pafford: My basic involvement, as far as water is concerned, had to do with how effective something would be in controlling floods, or in supplying water for irrigation. Incidentally, the water had to be supplied through stream sanitation and navigation on the Missouri River too, below Sioux City.

Storey: What do you mean, "stream sanitation"?

Pafford: People dump sewage in rivers from cities. And if you have zero flow coming through there, it's going to be a stinking mess. You got to have dilution. That is related to dams, because even if there was no other need for the water, there's certain water you have to maintain through there to dilute the sewage. Even if the effluent from cities is treated very highly, it can't be treated just with chemistry, or it'll kill all the fish in the stream. So it's got to be diluted.

Storey: Right. I meant to ask you, what happened to the military as far as you're concerned?

Pafford: How do you mean?

Storey: Well, World War II came on in '41. You would have been about thirty at that time? (Pafford: Right.) So you weren't drafted for some reason?

Pafford: Nearsightedness, 4-F. (coo-coo clock strikes three and chimes a song)

Storey: When you were working on what later became known as the Pick-Sloan Missouri Basin Program, was that the only thing you were doing?

Pafford: Well, different elements of it–ninety-five percent of my time, at least, was spent on that, different elements of it, different pieces of it.

Storey: And at that time, it was wholly a Corps program that you were working on, is that correct?

Pafford: No, the Pick-Sloan Program was a combination Bureau of Reclamation and Corps program.

Storey: Yeah, but the combination didn't occur until later, did it?

Reconciling the Corps' and Reclamation's Plans for the Missouri River Basin

Pafford: Ah, Reclamation was working on what they thought was their own basin flow program, and the Corps [was] working on what they thought was their own basin program, except they didn't care much about irrigation because they didn't know anything about it. So there were two competitive plans being theoretically cooked up. But each one of them was being sold real hard as being the total answer to everything, and both people knew neither one them was the answer. It took what was in both of them, if you really wanted to have a correct multiple-purpose aspect to it.

Storey: So these tensions between Reclamation and the Corps, did you see those manifesting themselves?

Pafford: They weren't there with the working people at all. They were there with top management who were interested in building a better empire for the Bureau of Reclamation or a bigger empire for the Corps of Engineers.

Storey: Were you folks as staffers talking to Bureau of Reclamation staffers?

Pafford: Oh, yeah, we were good friends, laughing about each other's bosses.

Storey: (chuckles) Did that add any practical results to your work, that interaction?

Pafford: I don't know which end reaction you're talking about.

Storey: Did your contact with the Bureau of Reclamation add anything to the Corps work? Or did the Corps' work add anything to the Bureau's work?

Pafford: They both did, because we learned. We in the Corps learned from people in the Bureau, and people in the Bureau learned from we in the Corps. The people in the Bureau didn't pretend to know anything about navigation or about flood control. In reasoning with them about what thus and so had to be [done] in the project to take care of flood control, they couldn't help but pick up information that way. We didn't know very much about irrigation–about irrigated agriculture–what works and what *don't* work. And that's high dry plains country, cold winters. We had no idea. Oh, we couldn't *help* but learn something from them: when water was needed for what purpose, how much good it would do. So it was a mutual educational program, among the working staffs.

Storey: Were you around in '44 when the two programs were merged together? (Pafford: Yeah.) Did you participate in that merging?

Ironing Out the Details

Pafford: Well, a fellow named Tom Judith [phonetic spelling] from the Bureau of Reclamation and myself sat down and ironed-out the details of what would go in which projects, and which camp would go in the total program. We put them together.

Storey: Where did you do that?

Pafford: Sometimes I was in Billings, up there where his office was. Sometimes he was down to Omaha where I was. And in automobiles. I mean, there's a lot of things came up, one problem or another: what does an area need? what does a dam site look like? We'd hop in an airplane or an auto and go look, together, so we're sure each one of us is seeing what the other one was seeing.

Storey: What was this Mr. Judith like to work with? How would you characterize him?

Pafford: Ah, he was a real active, imaginative, sincere individual. [He] felt something needs to be done for these people here, let's do it. And he felt the same way about me. So I mean, we were compatible. Our bosses may have been competitive, but we weren't.

Storey: Did Pick and Sloan pretty much take the work that you did, and that became the Pick-Sloan Plan, or was it changed a lot?

Pafford: No, the pieces . . . We went through piece-by-piece, probably three or four hundred individual projects. And as we added or discarded, they wanted to know what effect will this have on the economics of the total program, or on the effectiveness of the total program. And then either buy a piece to add, or leave it out. And most of what we recommended, they bought. Some of it they wouldn't, because it was getting too darned expensive. And of course there was always the question, "It's going to cost dollars, you know how much dollars it's going to cost. How many dollars might somebody get out of this?" Benefits, in other words. And they wanted to look at those too. They wanted to be sure that they didn't put their name on something that wasn't a paying proposition. Because they were going up with a multi-billion-dollar program, and they can see, when they were in Congress, they were going to get an *awful* lot of grilling, because that was a lot of money in those days. That was the equivalent of what trillions are now.

Storey: Of course all of this was going on during World War II. Did the fact that the war was going on have any effect on the way you were working? For example, did it slow you down [inaudible]?

War's Impact on Project Investigations

Pafford: It accelerated the work, because they figured the war was going to end, and there was going to have to be make-work projects to take care of the people coming back from the military, and people from factories that had been shut down. They felt that it was going to really be needed as an internal program–which it worked out to be, it worked very well that way.

Storey: So, for instance, when you needed an airplane, did you charter a commercial plane? Did you fly a military plane?

Pafford: No, among other things, we in the Corps of Engineers had set up Kurt LeMay with SAC [Strategic Air Command] headquarters just outside of Omaha. They had lots of airplanes. If we needed to go somewhere, Lou Pick would give one of them a ring, Kurt or somebody, and say, "Hey, I got a couple of guys that want to go." We went!

Storey: So you used military planes, then?

Pafford: We had a few of our own, but primarily, if it was long trips, like from Omaha to Billings, which is the better part of a thousand miles, [we] used military–it got there faster.

Storey: Okay. What about when you did ground travel? How did rationing and stuff work for the federal government in those days, do you remember?

Pafford: We had–I forget the number–it was a card of some type, anyway. Anybody that had gasoline, they had to give it to you. (Storey: Oh, okay.) I mean, you paid for it, but we had no shortage of gasoline. The military, everywhere, and also the people in charge (phone rings) of the economy . . .

Storey: When you went there in '42, were they already anticipating the end of the war and the need to employ people? Or did that come later?

Pafford: Not really. The impact of the war was just really growing on people, because it had got an awful lot of people drafted, an awful lot of factories closed down. It really slowed business down. And they *knew* that if the war ended suddenly, there was going to be practically chaos. There'd be an awful lot of people needing an awful lot of work, real quick. [Inaudible] that program, it worked out that way. We didn't claim that as benefits, though, but it worked out real well that way–got a lot of people, as they returned from Europe, particularly, they could get a job about as quick as they wanted, within two or three months after they got back.

Storey: How did you go about studying alternatives for the project for the Corps?

Studying Different Pieces of the Project

Pafford: I'm not sure what you mean by "studying alternatives." The basic alternative was, if you didn't do *anything*, what happens then? Then there were different stages, how much control you could put on a flood by what means. And practically throwing the book at it with unending money, or doing sort of a halfway feeble attempt, and trying different ways in between–just setting up different combinations of projects, from very skimpy layout to the very elaborate layout, and then analyzing what you got out of it: Both the employment and dollars.

Storey: Of course, nowadays, we have computer programs where we can plug in figures and they very quickly work out the alternatives. Did it take a long time to figure out the effects of alternatives in those days? How was that done?

Pafford: More, it took a lot of skilled people–not a *lot*, but quite a few. Something two people could do now might have taken eight or ten.

Storey: And how many people were working with you on the Pick-Sloan Missouri Basin plan?

Pafford: Well, in total, counting people who were designing projects, planning canals and everything else, for the Bureau of Reclamation and the Corps of Engineers, probably a total of about two thousand.

Storey: Okay, but up to the time when the two projects were merged and Congress authorized them in '44, how many people in the Corps were working on it?

Pafford: Well, if you're talking about the people who were out drilling dam sites and everything else, at least two or three thousand. But I haven't gotten that low or anything. I mean, people out running surveys of dam sites, or surveys of where you'd put flood walls, drilling down to find out what kind of foundation you have–those are called field exploratory people. There were a *lot* of them. There weren't near as many people in the office, because even though it sounds real complicated now, there weren't the computers as we know them now, but there were calculators that did a lot of things real fast –mechanical or electrical–not near as good as the computers now.

Storey: How many people were in the office, in Omaha, working on the project, do you know?

Pafford: I don't really remember.

Storey: Who was supervising the project? Do you remember that? Pick was up at the top.

Pafford: He was up at the top. Most of the work was done in what were called engineering divisions, which were a lot broader than that. They were economics, costs, and so on and so on. Let's see, in our Missouri River Division–there were five districts who were doing work on this. In our particular office, there was probably constructional engineers, geologists, and everybody else–probably a thousand. Or no,

probably a hundred in *our* office, and in each district there were probably three or four hundred. So I'd say three or four thousand, total, professional people, and subprofessionals.

Storey: Good. So then after the war, you were there another fifteen years or so. What were you involved in during that period?

Following the Progress of Construction

Pafford: Carrying out the design and following the progress of the construction. And then after different projects were completed, had to figure out ways of doing real life operation to fulfill the things you had theor[ized]. A flood wasn't going to go over so high–*that* you knew. How you'd ever work up to it so it wouldn't go that high, or how you ever let it back down after it did–that's where the work was.

Storey: Uh-huh, figuring out how to manage the pools and so on.

Pafford: Right, day-to-day management, to get the results on extreme low water or extreme high water–how to get the results you wanted. You had a day-to-day operation with the things. And you don't know what's coming up–all you know is what's happened up to now.

Storey: Do you remember any design features on the Pick-Sloan Project that went particularly well from your point of view, that really worked well?

Pafford: One of the things that was the big unknowns and real complications, the Missouri River being the "Big Muddy," was an awful lot of sediment and mud, sand, and gravel, and everything else. What was going to happen to these dams and reservoirs as the water came down, carrying all this sand and mud? That was a *tough* one. There was a lot of laboratory work done on that. We had a so-called Sediment Advisory Board, the people that knew as much about that as anybody in this country, and a couple over from Europe–I forget their names–to help plan that.

And then programs, as the water started to be backed up, of measuring what actually happens. See, I agreed with what had been computed. And actually, it agreed fairly well. But some of those smaller reservoirs would be full of nothing but *mud* in a couple hundred years.

I mean, they wouldn't be there very long. The large ones, oh, the big reservoirs, like Garrison, Fort Randall,[8] would probably lose two percent of their capacity for water a year, would become mud. And the interesting problem then, of course they're beginning to learn now–I haven't been back there to really find out–is that as a layer of mud sets in on a slope and everything, what happens when you're discharging water off of it? Does the mud stay there like that? Or does it flatten out? There are good theories for both, and good examples for both, all over the world. And one or the other will probably happen, or something in between. (laughs) Nobody knows yet for sure.

One of the *very* interesting things, with all the local effects, the different little dams they'd have and the big reservoirs, was how did you integrate the operation so everybody knew what was going on, and what effect their particular activity might have on the rest. So we set up the so-called Coordinating Committee for Reserve River Operations, and drew up advance plans every year, speculated forecasts of what would happen to different sequences of flows, and then checked it afterwards to see what happened. Heck, that's been working very well, they tell me. I set that up in . . . about 1958 or '59. And everybody has picked it up with enthusiasm. Of course, it's really interesting, because every year, you're laying your neck on

8 Both Garrison and Fort Randall dams are Corps of Engineer structures and major features of the Pick-Sloan Missouri Basin Program. Garrison Dam, located 75 miles north of Bismark, North Dakota was completed in 1956. Also completed in 1956, Fort Randall Dam is located in southeast South Dakota. Both dams sit along the main stem of the Missouri River and provide flood control and produce hydroelectric power.

the line what you think is going to happen, and then you find out that year whether it did happen or didn't. Those that found out that they did right, prospered; those that didn't, didn't prosper so well, but they learned real quick. They went to the guys that found out and [asked], "How in the hell did *you* do this?" (laughter) Became self-educational.

Storey: You said you set that up. What was your position at that time?

Heading Up Major Activities within Missouri River Division

Pafford: I was in charge of planning, hydraulic design, and hydroelectric power, and flood control in the Missouri River Division, the Corps of Engineers. I was in charge of all that type of work in the whole Corps in the Missouri Basin. And this fellow, Judith, that I mentioned, at the Bureau of Reclamation, was in charge of that for the activities out in the irrigation country–set up a counterpart resolution there. And we coordinated between each other to the extent they did anything up there that might have an influence on what we did, they'd let us know, and vice versa. If they did something we *thought* had an influence, we'd let them know too. And it worked real good. It was called the coordinating committee, and it was literally that. It had representatives of every one of the ten basin states on it–their key resource people, usually biologists or engineers. And I don't know how many state water masters and state water engineers, up in the irrigation country, were all members of the body, and they'd handle that. And I think essentially, in both areas, they included all the people that had any real reason or responsibility for what went on–responsibility to people . . . Wonderful if it went right, and the responsibility if something went wrong, too.

Storey: Did you attend any of those meetings?

Pafford: Quite a few of them–at first, particularly–to be sure that they were working and people were playing ball with each other.

Storey: How many people were there, at a meeting like that?

Pafford: On the Missouri River meetings, there'd usually be about forty or fifty. I don't know how many on the upper basin there were–probably again I would guess forty or fifty.

Storey: And so what we would see is a mixture of Bureau of Reclamation, Corps of Engineers, the state officials. Anything else?

Pafford: Yeah, any federal officials, like Fish and Wildlife or something, would be recipients of some of the good things or bad things that might occur from what the other people did.

Storey: Could you walk me through your civil service career? "I started as a GS-1 at dah-dah-de-dah, and then two years later . . ." Do you remember that?

Pay Grades through the Years

Pafford: Well, as it turned out later, it became part of my career, although it wasn't at the time. When I worked on that business census, it was for the Commerce Department. (chuckles) It was really something! It was $11.50 per day, every day (chuckles), thirty-one days a month. That was it! Which actually wasn't bad pay, probably the equivalent of (laughs) a $10,000 job now. Because I remember buying a new Chevy out of it, cost me a whole six hundred bucks, paid for. Then later on, I started with the Corps. I was supposed to be at a P-1, at $2,000. But it was right at the time all of federal service had been downgraded to where I got $1,800 instead of $2,000.

Storey: A P-1 is what? That's the . . .

Pafford: I don't know what it'd be in G-S. It'd be, what, GS-12 or 13? When I retired, let's see, I was GS-16.

Storey: Uh-huh, as a Regional Director? (Pafford:

Yeah.) What were you when you were the head of hydrology and so on for the Corps?

Pafford: P-6, I think. They were professional grade. I don't know what they're the equivalent of, probably a GS-13 or 14.

Storey: So we went to the GS system after you left the Corps in '63?

Pafford: Yeah. I don't know, maybe they did just before I [retired], I don't remember. It didn't affect the paycheck, the paycheck kept on coming through like it should, and getting bigger like it should. (chuckles)

Storey: What kinds of coordination were you doing with the Bureau of Reclamation in your position as Head of Hydrology and so on?

Coordinating with Reclamation and Water Users

Pafford: Oh, primarily intermeshing programs, be sure that both weren't using the same water twice or something.

Storey: Were you high enough that you were part of the tensions between the Corps and Reclamation when you left? Or were you still not that high in the organization?

Pafford: I wasn't part of the tensions basically that caused them. I was very busy helping the people that *were* the tensions, helping them set up different position papers and stuff like that, because I knew the fundamentals of what went on. They didn't. They hoped that they had a few facts in some of the things that they alleged. And I think that was true of the Corps, and it was also true of Interior. It was helpful if they could fall back on a fact that they could demonstrate was a fact once in a while.

Storey: You mentioned that part of the reason you caught Mr. Judith's attention was because of the intermediary role you were doing, the negotiating role you were doing. Would you talk more about that, please?

Pafford: Well, there were problems with practically every state, particularly the states as you got further up the basin where it was drier. "Who are these guys from down where they want all the water to float boats to navigate?" And if somebody from Missouri had an idea, automatically in North Dakota that idea was no good because it came from somebody in Missouri. My job was to get them both educated, let the guy from North Dakota find out what really went on in Missouri, and let the guy from Missouri find out what really went on in North Dakota, by getting them together, primarily. (Storey: Getting them to talk?) They found out they all lived in the same world. Really, you'd be amazed, how many people *don't* realize they live in the same world.

Storey: Yeah. Do you remember any particular situation where you did this?

Pafford: No, not particularly. It was chronic, on-going, forever. It was particularly, though, between the people who needed water for irrigation in the upper basin, versus people who needed water in the Missouri River so they could provide low-cost transportation for bulk transportation, things that needed to move. All a guy who wanted to float the stuff downriver, my God, you have to put the loading down on these barges–he couldn't have a full nine feet of water. He couldn't get by very well on eight feet. If that guy up there wanted that much water, maybe it ought to be eight feet, and he couldn't have nine feet, it was sandbars. And the people up north, if there was *dry* weather that came along, if there was *wet* years, maybe it was *too* wet, but nobody they could blame on that (chuckles) except the sky. But if there were *dry* years, if people downstream had water rights and had the right to insist on some of that water going down there, well, God, that's water they could have used to irrigate, too. They could have had a ninety-five percent crop instead of a ninety percent crop.

Storey: Now, what was Mr. Judith's position that he

could suggest you for a regional directorship?

Getting the Attention of Reclamation

Pafford: It was what I was doing, bringing people together and figuring things out, and taking pretty hard-nosed stands on stuff, when they had to be taken, and times when someone that was being too overbearing. I'd just take a hard-nosed stand and be polite while I was doing it, and try and reason with the people, and manage them, reason with them, eventually. And he saw this big problem coming up with the state out here in California. And they had Pat Brown as governor out here, who was a good friend of [John F.]Kennedy, who was just becoming president. And he said, "I need somebody to take a firm position, but be polite and nice while they're doing it, and who'll do his damnedest to get these people to understand the other guy's problems."

Storey: The commissioner at that time would have been Dominy, wouldn't it?

Pafford: Yeah, Floyd Dominy.

Storey: So he selected you for the position on Mr. Judith's recommendation?

Pafford: He resented me very greatly.

Storey: But how did you get the job? I don't understand.

Pafford: Because Ken Holum told . . .

END SIDE 2, TAPE 1. MAY 25, 1994.
BEGIN SIDE 1, TAPE 2. MAY 25, 1994.

Storey This is tape 2 of an interview by Brit Allan Storey with Robert J. Pafford on May 25, 1994.

Pafford: Like I said, it real smooth. Probably said, "Well, now, Floyd, if you're getting tired of working with us the way we want to work, why, I guess we don't need you." I'm sure that would have been his approach, because he was a smoothy.

Storey: This is Ken Holum?

Pafford: Ken Holum, H-O-L-U-M.

Storey: And what was his position?

Pafford: Assistant Secretary of Interior.

Storey: And so Mr. Judith . . . Am I correct in thinking Judith suggested you for this position?

Pafford: No, Ken Holum himself did.

Storey: It was Holum who did it. Oh, I see.

Pafford: No, he represented the state of South Dakota, and was getting in on the middle of all kinds . . . They were in the middle, they were getting in on every flap that was going on. And he'd been in that . . . In fact, he was representing the state when we set up the program for operating the reservoirs, too, coordination on it. They figured they needed somebody out here to get people to see each other's viewpoint and try to work together, and hold a firm position but be polite while he did it.

Storey: At that point, you had been in Omaha for about twenty-one years.

Pafford: Well, not that long, I don't think. Let's see, I went out there in '42. Yeah, you're right!

Storey: And you left in '63.

Pafford: I was in the Omaha District for the first six years. It was '46 when I went up to the Missouri River Division Office. So I'd been there seventeen years at that.

Storey: Yeah, but pretty well established in terms of used to the community, and all of those kinds of things. Did you have a problem deciding to leave Omaha?

No Problem Leaving the Corps

Pafford: Not particularly, because I'd been real interested in that program that was being developed, and to be sure I got all the elements in it that I thought ought to be in it–or anybody else thought ought to be in it too. And it was coming into operation, and I was very interested in seeing the operation get started, to be sure they were done in a way that would do what we had planned on it doing. It was pretty well done, and it was going along real well. So I was really ready for a new challenge. I got something else to do. What I'd been working on so hard there was working good, so what the heck, it didn't need me any more.

Storey: Did you have family you had to move, besides your wife I mean?

Pafford: A wife and a son. And it was a different wife. She passed away in between.

Storey: So you came out here and had new challenges.

Pafford: Yeah, well, something different to try to do, figure out what to do about.

Storey: Yeah, that's about the time the San Luis Unit was being constructed, is that right?

Central Valley Project Issues

Pafford: It was being planned then. The state had just voted a bond issue to go into the water business themselves. The Bureau of Reclamation had been the only one that supplied water. The Corps of Engineers stopped floods. But there wasn't anybody out here, really–particularly people in the L.A. area–that wanted water. They wanted some help getting water too, but there wasn't anybody with the ability to get it. So they figured, "Okay, let's set up a state unit. We'll have influence on it, since there's more people down there, they can have more influence on the state than anybody."

Storey: Yeah. And how did you become involved in working that out? You mentioned earlier that we built it for them, ultimately.

Pafford: Their original thought, and it'd just been sort of slowed down when I came out here, was that they'd get an act passed by Congress turning the whole Bureau of Reclamation program in the Central Valley over to them. It would be their project. And of course they had an idea of getting it free. (Storey: Uh-huh.) The congressmen from the East had been responsible for putting the dough up, and they had repayment contracts coming back to get some money back. And the people like Dominy and such-like, and Holum, who were interested in maintaining the Interior Department and Reclamation in business, weren't exactly in favor of turning it over to the state. (Storey: Uh-huh.) That could have become a first-class row in Congress, or else people could go out and work out a joint approach where they could use everybody's dough and work together, which worked out. The fellow that really helped on that was Bill Gianelli, who at that time was in charge of their Department of Water Resources out here.[9] He was a good sharp guy that had the same attitude I had–different people have different problems, there's bound to be some way they can get together and work it out.

Storey: Uh-huh. I believe he's living down now in Carmel.

Pafford: Yeah, he has been. I guess he's still alive. His health was a little bad. I think he's still around. (Storey: Uh-huh.) We exchange Christmas cards, and that's about all.

Storey: But you were working with him to work this out, were you?

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9 Under California Governor Ronald Reagan, William Gianelli served as Director of the California Department of Water Resources, which oversaw the the construction and operation of the State Water Project. Mr. Ginaelli also participated in Reclamation's oral history program. See William (Bill) R. Gianelli, *Oral History Interviews*, Transcript of tape-recorded Bureau of Reclamation Oral History Interview conducted by George Petershagen and Donald Seney, Bureau of Reclamation, July 28, 1994, and September 23, 1994, at the narrator's home in Pebble Beach, California, edited by George Petershagen, 2010, www.usbr.gov/history/oralhist.html.

Pafford: Yeah, he was head of the Department of Water Resources. I was working with him, and we were working also with some of the more influential state senators and the state assembly.

Political Influences

Storey: In particular any names that you remember?

Pafford: Carley Porter, who was one of the real leaders. He's long since dead. He was, to my mind, the most important. He could do a better job with a case in water to have him in the state legislature. (phone rings)

Storey: You were talking about politicians involved in the San Luis Project.

Pafford: Carley Porter is the one that I remember that could do a better job, in knowing what was going on. Oh, a fellow that was, again, an administrator there, was Bill Warne,[10] W-A-R-N-E, who was in charge of the Department of Water Resources when I came out. But he leaned primarily on Bill Gianelli for how the two might be worked together. (Storey: Uh-huh.) But he also was very close with Governor Brown. Oh, Pat Brown wasn't hesitant about it, [if] he wanted to find out for himself, to know something, he went and used the phone and asked, "Hey, what the hell goes on here, Bob?" Even though he got clobbered eventually, he was a good governor. I mean, he wanted to know from sources, rather than indirectly.

Storey: Yeah, "let the staff people do it for him." He didn't like that approach. Did you ever have contact with U.S. congressmen or senators?

Pafford: Bizz Johnson [Senator Harold T. Johnson] a lot. Several others, although Bizz was the one that

10 Before becoming taking charge of the California Department of Water Resources, William Warne served as Asssitant Commissioner of the Bureau of Reclamation, 1943-1946; First Assistant Secretary of the Interior, 1947-1951. Mr. Warne also wrote a short history of the Bureau of Reclamation: William E. Warner, *The Bureau of Reclamation* (Praeger Publishers, Inc., 1973).

was more interested than anybody else.

Storey: How did you interact with him?

Pafford: With Bizz? (Storey: Yeah.) Oh, we got along beautiful.

Storey: Did he call you every other week, or every day, or once a year?

Pafford: Whenever there was an occasion–maybe go six months, maybe go six hours.

Storey: What might he consider to be an occasion?

Pafford: Ah, he wanted to get money to spend up here. (chuckles) "Is there a good project there? Is there something I can push? Who might be interested in this?" If we were talking about the San Luis Dam, who might be interested in it. I said, "Well, some of your friends down in the L.A. area." "Oh, good, I'll go to work on it." Working for his own project, Auburn Dam or something.[11]

Storey: Oh, Auburn Dam was one of his projects? (Pafford: Yeah.) You mentioned that it was killed politically earlier. What did you mean by that?

Auburn Dam

Pafford: It wasn't a very good project to begin with, and for some reason, some of the local property owners up there had been told what the government might pay them for their property and they didn't like that. So they thought maybe they could pull a hold-up deal. So they started rabble-rousing. Only the rabble-rousing took off

11 Authorized in 1965, Reclamation planned Auburn Dam as the primary feature of the Auburn-Folsom South Unit, American River Division of the Central Valley Project. The dam became a target of the "Carter hit list" in 1976 and was never constructed due to economic and environmental concerns. For more information, see Jedediah S. Rogers, "Auburn Dam Auburn-Folsom South Unit, American River Division, Central Valley Project," Denver: Bureau of Reclamation History Program, 2013, www.usbr.gov/history/projhist.html.

and got away like a wildfire! (laughs) It was just raising hell, rather than trying to help those people get more money for their land. It's funny how little things like that . . . Well, they happen everywhere, of course, all the time.

Storey: Yeah. What about the structural problems at Auburn?

Pafford: There were problems that would have been expensive to handle, but they could have been handled, no question about that. They would run the price up maybe ten or fifteen percent above what people would have thought was a prudent investment, although it wasn't too good an investment anyway, in a lot of ways.

Storey: Were there other projects that Bizz Johnson was particularly interested in?

Pafford: Oh, he was interested in anything to get money spent in his congressional district.

Storey: And did his district go clear down to San Luis?

Pafford: No. No, it was north and east of here. He didn't even have Sacramento County: Placer County and on north and east.

Storey: I've forgotten the name of that dam over toward Tahoe. It isn't clear over to Tahoe, it's south off the road. (pause) Well, it doesn't matter.

Pafford: You're not thinking of Folsom? (Storey: No.) That's the one that supplies *us* water. (Storey: Yeah.) Which had it's problems with foundation, which are finally being whipped, I think.

Storey: Tell me more, if you could, about the Newlands Project[12] and the Indian problems over there, and

12 The Newlands Project was one of the first Reclamation projects. It provides irrigation water from the Truckee and Carson Rivers for about 57,000 acres of cropland in the Lahontan Valley near Fallon and bench lands near Fernley in western Nevada. In addition, water from about 6,000 acres of project land has been transferred to the Lahontan Valley Wetlands near Fallon. For more information, see Wm. Joe Simonds, "The Newlands Project," Denver: Bureau of Reclamation History

how you became involved in dealing with them.

Newlands Project Issues

Pafford: Primarily through getting some of their water people from both outfits to sit down with *our* water people, and figure out how much water they really thought there was. And how much each outfit really had to have before they'd go broke–just the absolute requirements, which the Indians had a hard time backing up. And then getting them to talk with their bosses, sit down with their bosses and them. Said, "Okay, we got a problem. If the Indians have it your way and take all the water away from the Newlands Project over here, that part of the economy in Nevada is going to go bust and go out of business." The Indians wouldn't have been *too* regretful to have that happen, except they could see that that wouldn't be (chuckles) bought politically. (Storey: Uh-huh.) So they realized it was a fact of life. And trying to get the farmers over in Nevada to realize how really up against the wall these poor Indians were. And there was a case that if it was carried to the public, would be "lo, the poor Indian." They were really . . . So politically, the Indians could have been a quite nasty factor, without any real basis at all, except they were just damned hard up.

Storey: And were you able to work something out?

Pafford: Yeah, we worked out compromises. The Indians got themselves set to certain elevations that are going to be real critical if they went down. Some shrine or something they were mixed up with–I mean, some folklore. By the grace of God, the weather turned right enough anyway, didn't have to go down that much. And we had told them that if the weather was wet ninety percent of the time or better, why, they wouldn't have any problem there. If it was drier than that, they'd have a problem. Nature cooperated. The problem had disappeared.

Program, 1996, www.usbr.gov/projects/pdf.php?id=142.

Storey: Did you ever go to meetings over there?

Pafford: We went there, didn't have a very good place for meeting. We'd usually have the meetings here in Sacramento, or go over and have them in Reno.

Storey: What were they like? How did the Indians react?

Pafford: Kind of hard-nosed, and they had a problem, and they were damned hard up, and they were desperate, and this might give them a chance to get more people to come over and fish, spend more money. The only chance they saw of having anything other than pure desperation. They were basically pretty nice about it. A couple of them yelled, like on a soap box, but most of them would. . . . "Gee, fellows, we're so damned much worse-off than you, can't you help us some way?"

Storey: Yeah. I've been to meetings like that.

Pafford: Yeah, I mean, it was really sort of a pitiful case. Of course they were just in the wrong place at the wrong time. That's what really was the basic problem.

Storey: On another topic, there are many people who criticize Reclamation about our cost benefit figures. In effect, they feel we've "cooked" our cost-benefit ratios and so on. And I noticed when you were talking about the Missouri Basin, and the projects that went in there, that you were saying that everybody wanted to feel that they were supporting economically justifiable projects. What is your response to the idea that a lot of these people have that Reclamation was just cooking its figures?

Reclamation's Cost Benefit Figures

Pafford: I think they definitely took the optimistic view, but I wouldn't consider . . . optimistic realistic view. It *could* have happened, rather than being impossible. I wouldn't say that it was most likely to happen, but it was within the realm of

plausibility. If Reclamation had any economic implausibility, the sum of the rates at which they peddled water over here. That was forced on them by Congress. Congress was kept well informed of what they were doing. The rates they were having charged over here on the Central Valley Project didn't have much chance of doing the repayment they were supposed to. But the congressmen knew it full well, and they did it. And I mean it was horse trading between congressmen that wanted favors for their people here, politicians in New England who wanted some of the favors for *their* people. "Okay, you guys do it for us, we'll do it for you." You'd never see any of that, of course. (chuckles)

Storey: (facetiously) No, you never see any horse trading in politics.

One of the things that was going on while you were Regional Director was you had a cluster of environmental laws passed, National Historic Preservation Act in '66 (Pafford: Right.) NEPA [National Environmental Protection Act] in 1969, Clean Water Act, the Endangered Species Act, and so on. How did that influence your job?

Impact of Environmental Laws

Pafford: Well that slowed things down a little bit, but actually, I think it improved the job, because you had to do some serious looking at alternatives: what your other effects would be besides what you did yourself. And I'd say that the thing is going on right now, if you want to pass it back to the present commissioner, they should practice what they preached twenty years ago. They're talking about "to hell with these farmers and to hell with these city people, let's send the water down for fish." And they finally got caught by a judge here in California that said, "There's such a thing as environmental enforcement of law, that you'd better put out on the table what the effects are going to be on these cities and these farmers if your commissioner arbitrarily runs this much water

down the river that he says he's going to." And that happened two weeks ago. And it's something they didn't do. I mean, the level of influence had varied a little bit. They figured, "Oh, we're riding high, we can do anything we want to." Well, the commissioner is finding out, it ain't San Francisco. And he's found out there are laws you have to obey.

Storey: This is the water released from the Water Omnibus Bill that was required for the salmon?[13] (Pafford: Yeah, right.) Some judge has recently ruled that they had to do an environmental impact study?

Pafford: Operationally, they can't do it until they've filed a complete environmental effect statement, because there is an environmental act that you can't take any action that is different than any action that has gone before, without doing an exhaustive study of the environmental effects. And the environment includes cities and farms. Actually, I think it's good. It's about time that people learn that just your own ideas–and I mean that on *either* side of the street–your own idea of what ought to be done, you can't just go out and do it, to hell with what happens to anybody else. Well, it isn't that kind of a world. We all influence the welfare of everybody else.

Storey: Let's see, there must have been two commissioners while you were Regional Director, Floyd Dominy and Ellis Armstrong. (Pafford: Right.) Could you characterize them as commissioners?

Characterizing Reclamation Commissioners

Pafford: Floyd was real interested, a real activist.[14] He

13 Referring here to the Reclamation Projects Authorization and Adjustment Act of 1992, Title XXXIV, Central Valley Improvement Act, Section 3406, "Fish, Wildlife, and Habitat Restoration" that required the Secretary of the Interior to develop a program to ensure a natural and sustainable production of anadromous fish in Central Valley waters.

14 Floyd Dominy was Commissioner of the Bureau of Reclamation under the Eisenhower, Kennedy, and Johnson administrations, 1959-1969. Mr. Dominy also participated in Reclamation's oral history

had his own personal traits too, chasing women. (laughter) Ellis [Armstrong][15] was more Mormon, personally. He wasn't as effective as Floyd in a lot of other ways, but he still was rather conscientious about what he was doing. He wasn't quite as impulsive.

Storey: Floyd Dominy was somewhat impulsive in the way he [inaudible].

Pafford: I was real highly impressed, always, with Floyd, because of the energy he had and everything. As far as I'm concerned, Ellis appeared rather "blah," so he didn't give me any strong opinion.

Storey: What about Gil Stamm? He succeeded Ellis Armstrong.

Pafford: I thought Gil was a very capable guy.[16] I thought he was trying to do a good job. I'm not sure he was in a position to do it, but he was trying.

Storey: Well, he was involved, for instance, in the negotiation of the contracts up on the Sacramento River. (Pafford: Yeah.) In order to avoid, I guess, adjudication of the river [inaudible] system.

Pafford: Right, he did a good job.

Storey: How did they coordinate? He, of course, was an assistant commissioner out of Washington. (Pafford: Right.) How did they coordinate that with the Region?

Pafford: By sitting down and communicating, talking it over, keeping everybody informed pretty well.

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program. See Floyd E. Dominy, *Oral History Interviews*, Transcript of tape-recorded Bureau of Reclamation Oral History Interviews conducted by Brit Allan Storey, senior historian, Bureau of Reclamation, April 6, 1994, and April 8, 1996, at Bellevue Farm in Boyce, Virginia, edited by Brit Allan Storey, www.usbr.gov/history/oralhist.html.

15 Ellis L. Armstrong served a Commissioner of the Bureau of Reclamation under the Nixon Administration, 1969-1973.

16 Gilbert G. Stamm served as Commissioner of the Bureau of Reclamation under the Ford Administration, 1973-1977.

Storey: Well, I guess what I'm trying to get at is, where were the boundaries of responsibility? What was the Washington Office's responsibility? What was the Region's responsibility? It would seem to me that contracts within the Region would have been a regional responsibility.

Boundaries between Regions and Washington Office

Pafford: Except there was a Washington political problem again, which is why the problem came up in the first place, by somebody who was in Washington and knew first-hand when they got a phone call what was going on, had to be involved in it, so they knew what was going on.

Storey: Did Mr. Stamm–was he actually actively involved? Or was it more staffers out here doing the work and he was sort of on a committee that [inaudible] what was going on?

Pafford: The staff would do most of the work and tend to get things set up, but when it came to the payoff, he'd be involved with it, so that the people here that knew it would stick, or felt they knew it would stick. So it was a team effort.

Storey: Did you get any assistant regional directors?

Pafford: Yeah, I had several. When I first came out here, a fellow named David Sullivan was one of the most competent people, just strictly professional, you'll ever find anywhere–really good. A fellow named Carl Cady [phonetic spelling], the biggest help I ever had. He was a real friendly, well met–could drink a beer with anybody in the legislature and find out what was cooking down there. We had several others, but Sullivan and Cady were the two best. Well, one that followed up, a fellow named Mike Catino,[17]

17 Michael A. Catino served as Mid-Pacific Regional director, 1981-1983. Mr. Catino also participated in Reclamation's oral history program. See Mike Catino, *Oral History Interviews*, Transcript of tape-recorded Bureau of Reclamation Oral History Interviews conducted by Brit Allan Storey, senior historian, and Donald B. Seney, both of the Bureau of Reclamation, from 1994 to 1995, in Sacramento, California, edited by Brit Allan Storey, 2010, www.usbr.gov/history/oralhist.html.

who pulled out several years ago, was very effective locally, like Cady had been, and to a considerable degree, like Sullivan had been. He became Regional Director for a while there–a good one.

Storey: Yeah, I think he retired in '83 maybe, (Pafford: Yeah, something like that.) had been Regional Director about four years. (Pafford: Right.)

Now when you retired, did you retire and then accept a position with somebody? Or was yours just strictly a consulting thing?

Retirement

Pafford: I didn't take any . . . I wasn't on anybody else's payroll, ever. I didn't do much consulting. I mean, primarily a lot of guys jumped me about it–I found out they wanted me for some political reason or something–I didn't want to touch it. I didn't refuse to, I just told them it'd cost them five hundred dollars an hour, and every hour in travel costs. (Storey laughs) And so I wasn't refusing it. And I really didn't want to work. Hell, forty years of work is enough!

Storey: Uh-huh. What do you do in your spare time, then, in your retirement?

Pafford: Right now I've been fooling with doctors and medications. I have arterial fibrillation in the upper chamber of my heart, and take a bunch of medicine. Primarily keeping track of that and staying healthy, and exercising.

Storey: What did you enjoy most about the Bureau of Reclamation? What was the thing you remember most?

Remembering Reclamation

Pafford: Just a *very* good, loyal, hard-working staff, very dedicated to what they were doing. There wasn't over ten percent of them that were guys that were just out to make a living, make a racket out of it. Most of them were sincere–whatever their

job was, they thought it was necessary and they were trying to do it right. And I'd say that'd go for seventy-five percent of the people in the Corps of Engineers. I would give them as high a rating (chuckles) as I'd give the people that worked for the Bureau.

Storey: Really? Well, that's interesting.

Pafford: But there are very few people that are big voice and little knowledge in the Bureau.

Storey: When you think about having been Regional Director, what were the characteristics that you were interested in seeing in a person who was going to be promoted to a level like a division chief or an assistant regional director under you? What do you think the major characteristics were that were important in them?

Pafford: First of all, their basic ability to absorb knowledge, so if they are struggling with anything, they know how to go after understanding it, so you know what they're doing. I'd say that's more important than anything. The next most important thing is the ability to communicate so you can convince people that you know what you're talking about if you do, and that they should do whatever you think ought to be done.

Storey: Was there ever an issue that arose while you were the Regional Director that frustrated you, that wasn't possible to deal easily with, or effectively with?

Pafford: Oh, there were a *lot* of them that weren't possible to deal easily with, but I don't know of anything that I felt was an ultimate frustration. I always held . . . "Well, what should be done about this deal? What can you do about it? It's a fact, so there's there. What can you do about it?" So get together with whoever the problem is, work out what the devil we can do (chuckles) about it.

Storey: Well, I see that our time is almost up. I really appreciate your spending time with me.

Pafford: It's been kind of enjoyable. I'm still curious what the devil (laughs) it's really going to end up being, but that's alright. I mean, the motivation for doing it.

Storey: Well, what I want to ask you now is, is it alright for researchers from within Reclamation and from outside Reclamation to use these tapes and transcripts to do research?

Pafford: Right, I do not want them publicly . . . put out for political reasons by politicians. No restriction otherwise.

Storey: Would a restriction, for instance, say that they would not be broadcast for ten years? Would that be acceptable to you? Would that cover what you're concerned about?

Pafford: Oh, it would have to be, would have to be.

Storey: Okay

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Pafford: [inaudible] I can go on that long [inaudible]

Storey: Okay, well thank you very much.

END SIDE 1, TAPE 2. MAY 25, 1994.
END INTERVIEW