

The Army Environmental History Project

**Interview With Lewis D. Walker,
Deputy Assistant Secretary of the Army
for Environment, Safety and
Occupational Health (Retired)**

**Transcript of an Oral History
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Abstract: Lewis D. Walker, known to colleagues and friends as “Dee”, was the first to hold the position of the Army's Deputy Assistant Secretary for Environment, Safety, and Occupational Health. His leadership and management of the Department of the Army's worldwide environmental, safety, and occupational health programs improved environmental regulatory compliance and achieved record low accident losses each year. Mr. Walker developed a strong positive reputation with Congress, the Council on Environmental Quality, and the Department of Defense. He has won several awards throughout his career, including the Presidential Rank Award in 1986 and 1993 — the highest government award a career civilian executive can receive.

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1 Early Career

Family and educational background

MOORHUS: Good afternoon. Please start at the beginning. Tell me where and when you were born and about your family.

WALKER: All right. I was born in Enterprise, Oregon, on July 15, 1938. I grew up on a cattle ranch north of Enterprise. I went to school in a nearby town, to high school for two years. My dad and his partner had owned a cattle ranch in Idaho and a ranch in Oregon, and when his partner died, my dad ended up with the ranch in Idaho. So we moved, when I was a sophomore, to a little town called Orofino, Idaho. I finished my high schooling at Orofino in 1956, and in that fall, I enrolled in the University of Idaho [Moscow].

My area of study and major was Agricultural Economics. I finished in 1960 and graduated with a Bachelor of Science. Then I spent six months with the International Harvester Company, and after six months, I received a fellowship to return to the University of Idaho and enter my graduate school program. I spent two years and graduated with a Masters Degree in Agricultural Economics.

I had several interviews with the Department of Agriculture, the Department of the Interior and the CIA when I finished my graduate school, and after many sleepless nights, decided to go with the Department of the Interior and joined the Federal government in Albuquerque, New Mexico, February 4, 1963.

It was a water resource-oriented program in a very arid area of the Southwest. I spent three and a half years working on water projects on the Rio Grande Basin, and it was my first experience working with the Corps of Engineers, because many of our activities had to be coordinated for flood control and recreational purposes throughout the region with the Corps. I guess it was my first experience in also working with construction programs, because it was a transfer of water from the Colorado Watershed to the Rio Grande. We had three tunnels through the mountains, through the Continental Divide. After that experience, three and half years, I was selected as part of a team to go to Thailand.

This team of experts was selected from the Federal domestic program and sent to Thailand to work on water resource projects in Thailand and Laos. I was changed from working with the Bureau of Reclamation to the State Department and became a foreign service officer, a technical advisor to Thailand and to Laos on water resources.

We investigated and developed plans for a large water resource development project, which was going to be a \$1.6 billion dam across the Mekong River. We also investigated four projects that were internal to Thailand and three water projects that were internal to Laos. The notion that President [Lyndon] Johnson had at the time was, when peace came to the area, we were going to put large capital projects in the area to stimulate economic development.

After five years of perfecting those plans and we had the internal projects pretty much started, it was decided that the World Bank and other experts could carry on that work, and we returned to the domestic program in 1971.

MOORHUS: I'd like to ask some questions about this period in Thailand. Were you there unaccompanied?

WALKER: No. I should back up just a little bit. I was in New Mexico about four months, and then my wife and I were married. She was attending the University of Idaho, and then she finished at the University of New Mexico [Albuquerque]. When I was selected to go to Thailand in 1966, she accompanied me to Thailand, and we lived in Bangkok. Then I spent most of my time in Northeast Thailand and about 25 percent of my time in Laos. Occasionally, she would travel with me, and we did a lot of sightseeing throughout the regions of Thailand, Malaysia, the Philippines, Taiwan and Japan. So we did a fair amount of traveling around that area.

Work in Southeast Asia During Vietnam Conflict

MOORHUS: That was a really interesting time to be there.

WALKER: Yes. It was sensitive, particularly sensitive up in Laos, since it was all covert operations in Laos. You did not see Americans in uniform, but still, operations were going on all of the time. It was an interesting time. Fortunately, as I was explaining this to someone not too long ago, in areas I traveled in, bad things seemed to happen before I got there, and

bad things happened after I left. There were some times of anxiety, but fortunately, I personally did not experience anything very serious.

We came upon some situations, after the fact, where buildings had been shot up by terrorists, and then we lost a crew of Thai engineers who worked for us to the Pathet Lao, which was a Communist organization in Laos. They killed five of our people. But, it was a great experience to insure that you could survive in an environment like that. Also it was reassuring that you could accomplish your mission of what you had to do, which was conducting the investigations of and planning water resources projects.

Thailand experiences

WALKER [cont'd]: It was here, again, that I also worked closely with a Corps of Engineers office attached to our office. The COE representatives were looking at flood control methods for the Mekong River, ways to decrease streambank erosion, and ways to maintain the integrity of the river berms. Here again, I found working with the Corps of Engineers in Thailand to be very beneficial. I would recommend this to young Federal career employees, to get involved with or take an overseas assignment. The first thing you should do is to learn the language. If you don't, you are at a terrible disadvantage. Americans who didn't take time to learn to speak the language didn't seem to enjoy their assignment. I studied 100 hours of Thai when I first arrived, and the ability to communicate helped considerably.

Forty Thais were working for me when I first arrived to finish one assignment. After that project was finished, I hand-picked eleven from the group, and they stayed with me the rest of the time that I was there, which was about four and one-half years. Frankly, they were one of the best teams I've ever worked with. I mean I've had some great teams here in the States, but working and living conditions are much better. But the Thai team was exceptional, considering the circumstances that we had to deal with while conducting the work.

In Bangkok, my wife studied Thai through the YWCA, and she studied conversation for a year and a half. Then after that time, she continued on studying reading and writing Thai. So when we left, she could write notes to the maid and to the yard person. The Thai people were just amazed that she could read and write Thai. We shared a house with a Thai family and we became close friends of our Thai landlady and her family. When we visited Thailand again after a long absence from '71 to 2000, our landlady's

children met us at the airport. They had big parties for us for two nights while we were there and before we went to Laos, where I did work for the United Nations. It was quite an experience to see them after so many years.

Oh, the other thing is that we had a rule when we were trying to develop our skills in the Thai language. My wife and I would only speak Thai to each other for one hour during the evening if we wanted to converse. This drove us to perfecting our Thai. Some of the language stayed with me. I can still go into a Thai restaurant, order food, and carry on a light conversation. Some of it is long gone, but I still know the basic skills of speaking Thai. Also, I can get by in Laotian. I wouldn't say it's all that great, but I can. There are certain differences in Thai and Laotian. The dialects are similar, but there are some fundamental changes in the different words that you use. Many of the Laotian words and Thai words are the same.

So mastering the Thai language when you have an overseas assignment, or the language of the local situation, is very important, because you just will miss too much if you can't converse. Out in the villages, with my small vocabulary and where they would speak a little slower than most of the people that you usually talked with, I got along very well. My difficulty was around people that had larger vocabularies and the fact that they had a tendency to speak at a much faster pace. Many times, you'd have to ask them to slow down, because you couldn't grasp it fast enough, because it's a tonal language. It has a simple structure, but it's very difficult to handle the tones, and you have to practice your tones all the time.

My assignment in Thailand and Laos was a large water resource, regional development scheme in the Mekong River basin. It was called the Pamong Project, and it involved electrical output that was going to be twice the size of the Columbia Basin's electrical output at the Grand Coulee [Dam, Washington State] generator. It was a \$1.6 billion project, in 1967 dollars. When I visited Laos in the year 2000, I learned that the Australians have updated the cost to a \$2.8 billion project if the project were constructed today.

Early progressive environmental practices

WALKER [cont'd]: The great skill was to look at all of the aspects and costs of project development and determine the economic impact and the other benefits from the project. We actually did some things, in the environmental arena, which later on became accepted practice back in the

United States. We looked at waterborne diseases and aquatic weed problems that might be difficult to deal with in a tropical situation. Further, we looked at resettling refugees in developed areas and prepared plans for displaced people from the inundated area. We also looked at the archeological resources and cataloged those that we would have to move if the project were constructed. That was probably the first, because a lot of that type of work usually was ignored in the past water resources development projects.

We requested the World Health Organization [WHO] to work with us on waterborne diseases, because the U.N. [United Nations] was quite concerned that we would make the same mistakes in the Mekong Basin that the Russians had made in the Aswan Dam Development [Egypt]. For the Aswan project, with year-round irrigation, schistosomiasis spread throughout the area, causing severe human health effects. Also, the project took away the replenishment of very productive soil with the sediment being washed down and deposited along the Nile River valley and the delta, so they did not want us to make those same mistakes. The World Health Organization determined that we would not have a problem with schistosomiasis, because the sulphur content of the water was such that it would not allow that particular parasite to exist.

We studied the commercial fisheries, which was going to be a large, important benefit. It was estimated a \$6 million annual fish harvest, which is very important to a serious protein-deficient area, as well as low-cost hydroelectric power generation. In addition, four hundred thousand acres were going to be developed for irrigation in Laos and 2.5 million hectares in Thailand, which would greatly increase agricultural production. Monsoons in Northeast Thailand do provide (even though they're rather sporadic and kind of undependable) water for one crop. But irrigation gave you three crops per year. This is the difference that they would have in shoring up their food supplies.

The Pamong project offered inland navigation on the Mekong River from the South China Sea to Vientiane, capital of Laos. Currently, navigation is limited during the dry season by low flows, because right at the Cambodian and Laotian border there are what's known as the Khone Falls. During these low flows, the riverboats cannot get up over the falls, and goods have to be portaged around them. By maintaining a certain flow to the river and with some blasting in the falls area, navigation would be facilitated from Vientiane to the ocean.

Professional colleagues

MOORHUS: How many Americans were part of the group that you were part of?

WALKER: We had 37 Americans, augmented by a team of approximately 200 Thai professionals and about 20 Laotian professionals. Laotian professionals were very limited just because of their experience. Many of the Thais had been educated here in the U.S. One of my special assistants actually had her Master's Degree from Oklahoma State University [Stillwater]. The others had their degrees from Kasetsart University [Bangkok, Thailand], which was the main agricultural school there. In fact, that particular lady — I got her placed with the U.N. I've lost track of her, but I did get her a job with the U.N. when I left Thailand in 1971.

Most of my Thai employees went back to their government positions, but, for one direct hire employee, Mr. Supat, I got him a job with the American Embassy, and he stayed with the American Embassy for 15 years. Over the years, I'd kind of lost track of him. In the early 1980s, the Department of Agriculture personnel who were friends of mine were in Thailand, and he had been their escort officer. He took them around to visit different agricultural projects and different agricultural areas throughout the countries.

Some time in the late '80s there was a problem causing the refugees to come to Thailand from Laos. They complained of yellow rain, which was allegedly chemical agents being spread by aircraft. Actually, Laotian troops had used some kind of spray called yellow rain, because it fell like the rain, on a lot of hill tribes who had supported the Americans during the Vietnam conflict. A chemical officer, who used to work for me, went to Thailand to assess the situation over there. Supat was his escort officer.

When we got to Thailand in 2000, I was able to find Supat through the fact that my landlady's daughter worked at the American Embassy. Her boss was Supat's wife. It's a small world, and everything is connected some way. We had an opportunity to spend some time with Supat, and now, he's a very high executive in the largest food processing industry in Thailand. He travels all over the world marketing Thai food products. I told him I was very proud of him.

Mr. Misbott and Mr. Dominy

MOORHUS: Among the Americans that were there, the 37 people, how did they range in terms of age, education and authority?

WALKER: We had a project engineer, Mr. Misbott. He was a GS-15 at the time. He'd been overseas for 20 years, and by that time, he was also nearing the end of his Federal career. So I think he'd had about 35 years of service and was in his mid-60s. At that time, he'd had about 35 years of Federal experience plus a World War II military service period with the Navy. He was an engineer by profession.

We had a group of hydrologists, geologists, and a group of civil engineers who did the design work. Of course, we had the economic evaluation team, which I was part of, and we had the soil scientists, agronomists, and drainage engineers. Drainage was a very important consideration. The watersheds were not like our natural resource basins. Much of the area in Northeast Thailand was an old lake basin for which drainage is a very serious problem because of salt accumulation. When you apply water, it doesn't drain, and the soil is saturated. When water finally evaporates, it leaves a salt residue.

Come to think of it, I was about the youngest member of the team. I had three years of Federal experience when I arrived in Thailand, and the project engineer did not want anyone around him who hadn't had at least 15 years of experience. So here I arrive on the scene. I only had three years of experience, and I was the youngest person on the team. I survived that situation, even though he just didn't like people who didn't have much experience.

He was quite an individual, and he asked me one thing that I will always remember. He traveled in the field with me, and he was asking me why I was following a particular procedure when I conducted surveys. I almost did what you're doing. I went around, and I interviewed a lot of the villagers. There was a systematic sampling procedure that we tried to find out the impact of what water resource development, particularly, year-round irrigation, would have on the region. We'd also worked with the municipalities in Northeast Thailand and Laos to see what they would do differently if they had a very dependable, safe drinking water source. My answer to his question was, "This approach was recommended by our technical office in Denver, the Bureau of Reclamation." It was called the Chief of Engineers' Office, and it was a technical center, something like the Corps

has at Fort Belvoir [Virginia]. He said, "Well, they're 8,000 miles from here. You do what you think is right, and I'll back you." So, it was quite an experience working for him. I got the highest recommendations from him and actually I received a performance award, which, if I remember right, was a two-step increase in salary.

A strange thing happened there. The commissioner of the Bureau of Reclamation, near the end of the second tour, was Mr. [Floyd] Dominy. He came out to Thailand to visit the project and review our work. During his visit he wanted someone to take the speech he had to give before the United Nations meeting over there and give it some local flavor, and I volunteered.

He was a very harsh individual, and I thought, "Well, if I win, I'm all right. If I lose, it's going to be curtains" [laughter]. For my sake, his speech was very successful. The U.N. representatives were all very happy with it. He asked me, when he was about to leave, what I wanted to do when my tour was over, and I said, "Well, finish the job here. And I will try to get back into the domestic program some way." He said, "You need to come to Washington," so that's why I'm here. I knew that we were winding down and that I'd stay there until the office was closed properly. On May 22, 1971, I was one of the last three people to leave. All the other team members preceded us, and we stayed.

MOORHUS: Wow. That's an incredible experience for someone so young to be so far away and with such a level of responsibility.

WALKER: Yes. You didn't have the support that you normally have while working in the domestic program, and you didn't have your contacts. Your networking was just what you have in the new resident country. Surprisingly, one of the things when Mr. Dominy left Thailand, he was interviewed by the *Bangkok Post*. I saved the article and it read that he was going up to see his son, Captain Charles Dominy. So I'll tell you a connecting story, and then we'll probably go back to other topics.

When I went to the Army in 1980, the military assistant to the Secretary of the Army was Colonel Charles Dominy. We worked together for about six months, as I had to take items up to the Secretary or provide a briefing once in a while. After about six months, I said, "Well, Colonel, you probably don't know who brought me to Washington," and he said, "Oh, I do. I read your resume."

MOORHUS: Oh, my goodness.

WALKER: As I have said before, it's a small world, and a long time ago, I decided that, no matter what you did, it was always best to be professional and to stick with your professional values, and whether good or bad happened, those will carry you through any situation.

MOORHUS: Yes, good principle.

WALKER: Anyway, this wraps up the Thailand and Laos experience.

Family experiences in Thailand

MOORHUS: I want to ask a question. Were either of your daughters born in Thailand?

WALKER: Oh, yes. I need to cover that a little bit. Our first daughter, Camille, was born there in Thailand, and she was a little over two years old when we returned. The landlady "adopted" her, and she was kind of her surrogate grandmother. Actually, when our daughter was born, the landlady took the time and date of birth and the physical characteristics (height and weight) to the temple, and gave this to the monks. After a time, they gave her a Thai name, Purin, which means blessing. The landlady probably was hurt more than anyone when we left Thailand and returned to the United States.

MOORHUS: I can imagine.

WALKER: But, we kept up correspondence with her, and when we went back in 2000, we gave her pictures of Camille. One of our landlady's daughters, Prontrib, came to the United States and stayed with us for six weeks once. I guess it must have been in the early '80s. But she always called her "Baby Camille," because that was as she remembered her. "I can't call her anything else."

Camille was about two and a half when we returned to the United States. She could speak Thai when we got back, and it was sad, because we didn't promote the fact that both my wife and I could speak Thai. We didn't continue speaking with her. We'd been back here about six weeks, and she said her last Thai word. When she finished her plate of food, she said, "Set Lau." She said, "I'm finished," and those were her last Thai words. It was sad that we didn't keep up with the language, but it was amazing that chil-

dren pick it up so well, because her tones were perfect. This little blond girl was well known in several places in Bangkok. There was some particular shop that the landlady would take her, and two or three other places as well, where we were known as Camille's parents. The landlady and Camille had been there.

Another story about Camille was when we were touring Malaysia. We visited a Thai Buddhist temple, and we went in before the Buddha image, and our little daughter went up and went prone on the floor before the Buddha. The monks came out and asked, "Where did she learn to do that?" We answered that she had been taught by our landlady. One thing that amazed me, is that all little children, no matter, it seemed to me, how young, knew what to do when they were in the temple. The temples didn't seem to have any organization like Sunday school or other instruction. When we would go to the area, sometimes the only place to sleep would be in the temple grounds near where the monks lived. The temple grounds had kind of shelters and also raised sleeping platforms where you could put mosquito nets up over your bedrolls. But I was always amazed at how disciplined the little children were in the Buddhist religion, even though there didn't appear to be any structure to the process.

Not that we wanted to become Buddhists, but my wife and I took 12 sessions on Buddhism to more or less understand its nature and its place in the Thai and Laotian societies. We wanted to know the connection of religion with civil activities and the nature of what Buddha taught. But I came away with one impressive thing about it and that is how the children, at a very young age, knew everything to do in the temple, and I never found one that was shy about telling you what you should be doing in the temple when we would go before the Buddha image and light joss incense sticks and lighting candles and what not. They knew the ritual at an extremely young age. And for our little daughter to go in and know exactly what to do was amazing, and the Thai monks were just shocked that a little blond, blue-eyed girl would know how to handle herself in the temple.

MOORHUS: Does she have memories of being in Thailand?

WALKER: Vaguely. She can remember a little but not much more, and it is unfortunate. My wife was really torn. I probably would have stayed to become an international person, working wherever there was an opportunity. But, my wife really did not get too excited about having our children grow up overseas and getting used to that way of life, because you were

well taken care of, and you were pampered so much in a much different lifestyle. You had maids, a cook, and a person to take care of the yard, and the landlady took care of everything else. In fact, the maids and the cook came with the house. When we paid our rent, it covered all of the household staff.

The person who handled the yard work always kept the car just spotless. He even came in and asked if he could borrow a toothbrush, so I gave him a toothbrush. He wanted this old toothbrush so he could get the dust out of the crevices in the car. You don't have that kind of service here. Your total home life is taken care of. I laughed about the situation. When you'd go down to the dining room in the morning, breakfast would be ready, newspaper by your plate at the table. Your shoes would be shined by the door. You'd go out, and a car would pick you up and take you to the office when you were in Bangkok.

I got a promotion when I came here to the States. The first day we were here, we were living in Huntington Towers, Alexandria, Virginia. It's where the State Department usually put people up while they were transitioning back to the domestic program. I got up for breakfast, nothing was done, no newspaper, and no shined shoes. I told my wife, "What is going on here?" and she said, "You're back in the States." A further shock was that you received a promotion to come to Washington at the GS-13 position and the authority you had had diminished. You had considerable authority in Thailand and a support staff as well. In Washington, you suddenly find out you're a glorified office boy, with no office help.

You had to do all the things for yourself, and I was what we called a "filler troop," which meant that you had to go over to the White House when the dignitaries came for state visits. The Department of the Interior building is very close to the White House. So there is cultural shock just as bad coming back as it had been going to a foreign country. Also, there was the fact that the U.S. had changed a lot while we were gone. The riots had occurred, as well as the protests. You were very careful when you came back of even talking to anyone, because you didn't want anyone to know that you were associated with the government or what you were doing. It seemed like the military had to be very secretive about what was going on just because of the anti-military views that were so prevalent.

Working with the Corps of Engineers

MOORHUS: I have another question about your time in Thailand. Tell me more about your relationship with the Corps of Engineers over there.

WALKER: Well, due to the fact that our offices were co-located, we cooperated with civilian Corps of Engineers people in the Bangkok office. The purpose was that they were the experts at dealing with flood control, stream bank erosion, and inland navigation. They helped when we were conducting our studies and determining the flood control benefits. Also, the situation with the Mekong River, as there's quite a berm at the edge of the river that's formed over the centuries.

During the 1966 flood, the berms on the sides of the river, which were about 45 feet in height, were topped by over three feet of water. The 1966 flood was a 100-year flood, and the river over a mile wide and over 48 feet in height represented a considerable amount of water. When it topped over the berm, the water just spread for miles, flooding the towns and villages. In fact, long-tailed boats were going up and down the main street of Vientiane, the capital of Laos.

The Corps helped us when we documented the 1966 flood, which we did with photographs and plotting on maps with a lot of flyover. Some of us flew in helicopters, which could hover as we plotted the spread of the water from the river banks. We could clearly see the extent of the flood. I mean, the water in the rice paddies was clear, and the flood water coming was murky or muddy, and it could be easily seen from the air and from photos. You could see the edge of the flood water and how far it had spread, and through this we worked with the Corps and documented the 1966 flood.

MOORHUS: Did you know then, or looking back, do you know now what part of the Corps — where that office fit in the structure of the Corps?

WALKER: No. The only thing that I can remember about them was the fact that they did help get several of our Thai hydrologists and civil engineers enrolled in a training program in Portland, Oregon. Now, whether the COE employees were from the Portland Office or not, I don't know. It was where most of the Thai hydrologists went to get basic training for planning such a large water resources development project. It was excellent training, because our town commented upon how good the Thais were after they received the training.

Unfortunately, I guess I can't even recall the names of the Corps of Engineers officers, but I do remember the Portland Office and the technical support they provided for Thailand and Laos. It may have been the Center of Expertise for hydrologists and probably based on the work that they had done on the Columbia River over the years.

MOORHUS: Were there American Army officers or enlisted working in or around what you were doing?

WALKER: Yes, well, at least the people that we had the direct association with were civilians, but there were a lot of the military buildings, roads, and landing strips. There you would see American officers and soldiers, probably from combat engineer companies. They were doing the infrastructure development of support airbases and any ground troops that the United States had stationed there. For some unknown reason, Bangkok was under the control of the Navy, the Office of Naval Construction or the Chief of Navy Construction, because when we were invited to functions the chief was always introduced. Since we represented Public Works, my wife and I, as well as many of my team members, were invited to many functions.

[Lieutenant] General [Raymond] Wheeler had toured Thailand in the late 1950s and early 1960s and had assessed the national potential for water resources development and published his Report. We referenced his report and stated in our recommendations that they were consistent with the Wheeler report. Any other involvement with uniformed Army COE people would had to have been out of the combat engineer side of the Army. That's about the only connection that I could recall. There were a number of Army personnel in Thailand. When we would be working in Northeast Thailand, we noticed special forces, logistics, and transportation experts, and combat engineers that were consistent with the Wheeler Report. It seemed like the Army did a lot of building rounds and air strips, moving weapons, throughout Thailand, particularly to Northeast Thailand to the airbases. You'd see a number of huge Army transport trucks on the highways.

MOORHUS: Okay. Before we come to Washington and start on that, let's take a short break.

Personal and cultural observations

MOORHUS: Was there something you wanted to add to Thailand?

WALKER: Yes, a couple aspects. When you're working in an overseas environment, one thing is that your physical health is very important. We were healthy when we returned to the United States. We did not contract malaria. We didn't have hepatitis. We didn't have some of the other diseases of the area, such as dengue fever. We were very religious about taking our shots and keeping our shot record up to date. We took our anti-malaria tablets every Sunday and then also made sure we had our hepatitis shots every six months. We had several cases of dengue fever in our group, which impacts your joints and your bones. I think sometimes your hair even falls out, so it was not a good thing. Others did pick up malaria and hepatitis, but we were very fortunate.

The other thing I would say is about eating food in the tropics. I have eaten in some of the restaurants in Northeast Thailand and Laos that you'd think you surely were going to die after you had eaten there. Fortunately, I did not have any trouble, because I followed some basic rules. You always ate the food that had been cooked at a high temperature. You didn't eat any cold food. You would only eat fruit that was either peeled in front of you or you had peeled yourself. If you were given cold food, particularly peeled fruit, you don't know what it had been exposed to.

The Thai restaurants were usually very accommodating, and most knew what the Americans liked. They would have a bowl of very hot water in the middle of the table. They would dip our utensils in the hot water. You would also dip a cloth in the hot water and wipe your plate with it. That did not offend them at all. So I followed those basic rules.

Where I picked up dysentery was usually in a very clinically-looking, clean restaurant in Bangkok that had Western food or European food, and you'd think, "This couldn't possibly have any problem," and lo and behold, in a few hours, you'd be sick as you could be. The reason was that you had violated the principles that you'd followed in the field. When you were traveling through with Thais or at a Thai social event, you find particular dishes that you like and ask for those. There are some dishes that just are odd to our taste, and if you don't develop a taste for them, then you just say, "Oh, I'd really like some of that dish," rather than offending them by not taking any food whatsoever. You pick out what you like.

When I traveled with my Thai team in Northeast Thailand, we'd go into restaurants, and they would order a bowl of thick soup that the Thais dearly loved. It looked like boiled mud. It tasted like boiled mud, and it

smelled horrible. They loved it. I could never develop a taste for it. It had a special name, which I can't remember, because I never wanted to have it. So I would always say, "Oh, I really would love to have some of another dish." In the Orient particularly, saving face or not being embarrassed is a very important thing, so you go to great lengths to make sure no one is embarrassed.

I might tell some other subtleties, too, about dealing with the Thais. You never point your finger at a Thai. It was horribly ill-mannered. If you were standing talking to a Thai, you would not point your toes at the Thai. Your toes would go out at a 45-degree angle, so you wouldn't point your toes. It makes them very nervous and very uncomfortable, because it is another very ill-mannered thing to do. The other thing is, unless you were a very good friend of a Thai, you'd never put your hand on his or her shoulder or touch their head. You're just not to do that.

They'd counsel us all the time that they've had deals almost ready to be made with the Thais and were getting down to the final point in the negotiation process. You think it's all done, and an American would go over and put his hand on one of the Thai principal's shoulder saying, "This is a great deal," or something like that. Then the Thai would usually come back, "I'm going to have to review this." The deal would be broken and the meeting would come to a halt.

MOORHUS: Who is it that shares this kind of cultural orientation with you?

WALKER: Well, you usually go through an orientation before you go overseas with the State Department. I went through an orientation in Washington, D.C., for six weeks before I went the Thailand and Laos. People who are up on the mores of the Oriental society and culture and what not came to the Institute and provided training on how to adjust to overseas conditions. The one thing we were told is that, since you don't have a feedback society — one where the people are reluctant to ask questions — communication is a problem. [They think that if] they ask a question, it might cause you to think that they're really not very knowledgeable. So you have to get across a point in such a manner that they fully understand what they're supposed to do and how to go about it.

A man that had worked overseas in the Orient for a long time gave us a problem, and I'll never forget this. He asked us to describe how you'd put a

four-piece puzzle together and provide instructions on how to put it together, in a simple process: Take it apart, and then put it back together. We formed teams, and each team had all kinds of elaborate instructions of how to do this, and he said, “You all fail.”

He drew the template of the puzzle, and then he put an A, a B, a C and a D in each part of the template. Then he wrote an A, a B, a C, and a D on each piece of the puzzle, and he said, “This is the way you do it. You put A where the A goes, the B where the B goes, then C and then D. You have to have it spelled out that way, all of the steps and very clearly, because a lot of times, they won’t ask the questions. If you ask them if they understand how to do it, they’ll always say yes.” Actually, I always found that works pretty well here in the United States as well as in the Orient.

If we have clear communication of what you’re supposed to do, then you don’t need to ask me any questions. The instructions are very user friendly, you go at it, and you’ll accomplish the job. If you leave out one of the steps when explaining something and think that, intuitively, they would go ahead and do the step, many times they fail, because some people just didn’t follow the one particular step. To me, this worked very well in the Orient, and it was good to get that kind of training.

The little subtleties of the mannerisms — our maid would never put a piece of pie on the table with the point of the pie toward you. It would be off to the side. Another subtlety is that, when they serve the food, you will notice when you eat Thai food, it’s all cut up. It’s usually bite size. Some of it’s a little sizeable, but it’s still all cut up bite size. I was told that this is so you don’t recognize any parts of the animal that you’re eating, and that relates to the fact that you don’t want to know what part of your ancestor you might be eating. The cooks and butchers have been blessed by the monks so that they can cut up or kill the chicken, duck, or beef. There are many, many things about the Orient that are very unusual to Westerners that we don’t even think about their customs.

MOORHUS: But they do serve whole fish in Thai restaurants. Are the fish different?

WALKER: Yes. I never did quite understand that, but actually you pull off the piece of the fish using a spoon with the help of a fork. You are tearing that piece away, and not cutting. In a Chinese restaurant, they’ll bring

out a whole pig, but the Thais would say that's the Chinese approach, and it is, and they're not different. Also, this is not a Thai restaurant.

Living overseas is a challenge, but it is even more so in the East, where things are so different from Western views developed from our European ancestry that we take as fundamental to our culture. In an Oriental situation, it is entirely different. Like I say, we enjoyed our time in Thailand, and we've always kept in touch with our Thai landlady. She has now passed away, but we still usually get Christmas cards from her children. It's a fascinating society. They're very gracious. They're very skillful. They have a mentality that they always want to be very clever about getting the most for their money.

I usually joke with them, particularly in a Thai restaurant. When they bring the bill, I say, "*Mi mee satang*," and then laugh about it for a little bit. It means, "I really do not have any money." A satang is one hundredth of a baht, and a baht is five cents, so you could tell that that is very little. You're penniless, if you don't have a satang, and they laugh about it. The Thais here in U.S. restaurants quickly come back with, "Oh, we have plenty of dishes to wash" [laughter]. So they know our slang as well. They always laugh and say, "Here is an American who says he doesn't have any money." In Thailand, they thought we're all wealthy. I really enjoyed working with them.

Tension in Laos

MOORHUS: Did you encounter any anti-Americanism at that time?

WALKER: Not in Thailand. You would in Laos, where it was very sensitive from a political standpoint. You really didn't know whether you were working with a Pathet Lao (Communist) or someone who was leaning toward the Pathet Lao. My wife was in a situation once when she was in a morning market, and a Communist was shot very close to her. He came in on a motorbike. The soldiers there had told him to stop, and he didn't, so they shot him. She experienced a little closer situation than I did. I used to come upon wrecks and find bad situations, but she had a closer call.

Oh, there is one story, and I hate to tell war stories, but once when my wife was traveling with me, I took her across the Mekong River at an illegal crossing point at the same place many times, because it was so much faster. We were arrested on the Laotian side of the river by some Laotian border guards. I talked my way through it, but I violated something that

you should never do. We all agreed that I could go into Laos, work one day and leave our passports, and we'd pick them up at this point the next day. We'd go back across the river, and everything would be fine. They released us, and we left and went into Laos, and did the work.

We came back out the next morning to the same location to leave to go back to Thailand. The platoon of border guards had changed, and there wasn't one there that recognized us, so we couldn't get our passports. It's a horrible thing when you're some place so far from home, and we were without our passports. So we went at it in broken Laotian and broken English, trying to get our passports returned, because they said they'd be here at this location. After some time we went over to an old broken-down guard shack, went in, and there was an old desk there. One of the guards pulled open the top drawer, and there were our passports. I grabbed them, and we thanked them profusely. We quickly left and went down to the river and got across. My wife said, "You're never bringing me across illegally again" [laughter]. It was quite a process. It took you half a day to get through Thai and Laotian customs, and sometimes longer to get checked in. It was a horrible bureaucratic arrangement when you left Laos and coming back across the Mekong River. And, there was always the long wait for the ferry; the crossing just took so much time. It had worked every time except when my wife was with me, but after that, we always went across where we were supposed to go.

Today, if my daughters were out of the country way over doing something like that, I would be horrified. I was over there doing it and didn't think anything about it. We were young, and we were adventuresome, so we would take risks like that.

Return to the United States

WALKER [cont'd]: There was something, after coming back from Thailand, I wanted to mention. When we came back here and came to Washington, I was supposed to be here 18 months and then go to Brazil, but at the Department of the Interior, I got involved in such an important project that I couldn't leave. So the 18 months passed and they said, "Don't worry, in two more years, you can go to Colombia." Being transferred didn't look all that promising, so we decided to buy a house. We were renting a house just around the corner, and this house came up for sale, and so we bought it and settled here, and we've lived here ever since.

While I was at the Department of the Interior and the U.S. Water Resources Council, I did not have any overseas travel. During my time with the Army, I traveled many times to Europe, Korea, and Japan. Then after I retired, I was hired by the U.N. to go back to Laos to work on the national program for unexploded ordnance clearance. We can talk about that at another time.

2 Getting Established in Washington

At the Bureau of Reclamation

MOORHUS: When we get to that point. Tell me, then, about the assignment that you had when you came to Washington.

WALKER: My first assignment was in the Headquarters of the Department of the Interior, the Bureau of Reclamation, Office of Reclamation. I was in the division that dealt with repayment for water and service contracts. Actually, it was the Economics and Water Resource Management Branch. It was repayment, so I was out of the water resource project planning. There was a Planning Division, and I worked in the operational and management side of the Bureau's water program. Prior to the Washington, D.C., assignment, I'd worked in planning in Albuquerque and planning overseas.

One of the assignments of my office was preparing the annual report for the reclamation program for the commissioner to submit to the Secretary of the Interior. This was a great experience, as you were able to view the national impact that water resource projects have. I worked for the Bureau of Reclamation from 1971 to 1975. Mr. Warren Fairchild, whom you've probably heard of in the water resources circles, had been an assistant commissioner in the Bureau of Reclamation, became the Director of the U.S. Water Resources Council. The Secretary of the Interior [Rogers Morton] was the chairman of Council. The Corps of Engineers was very active on the Council.

In the time between 1971 and 1975, I didn't really do much with the Corps. Other parts of the Bureau of Reclamation did cooperate with the Corps of Engineers, but I was pretty much working on water resource repayment contracts, with the various water users out in the seven western regions of the Bureau of Reclamation. After Warren Fairchild became the Director of the Water Resources Council, he asked me if I would come up and serve in the policy office of the U.S. Water Resources Council. So I transferred to the Council and then became the Assistant Director for Water Resources Policy.

Water resources management issues

WALKER [cont'd]: Let's see, I might back up. While I was at the Bureau of Reclamation, we did something that was more or less a history of the Bureau of Reclamation Program, but it also looked at the future directions. Actually, it served as a history of the Reclamation water programs and provided future directions of the Water Resources Management Programs for the Department of the Interior. At that time, I developed a strong interest in the national policies for water resources, and it was very clear that we needed to do more work in the area of water management and looking at nonstructural approaches. Also, in a setting, you had to look at ground water as well as surface water to find ways to satisfy the needs of the water resources users in terms of mid- and long-term requirements of the country.

We studied what was going on in Israel with regard to efficient water management, as I believe that Israel was many years ahead of us in efficiencies and imposed water resources management. Israelis even study the varieties of plants, particular varieties of alfalfa, wheat, or any other crop that gives the highest output per unit of water. They also use night irrigation, drip irrigation, and controlled-sprinkler irrigation to a much greater degree than we do here in the United States.

I had discovered, when I was in New Mexico, that many of the farmers over-irrigate. If they are properly applying the water and doing it very carefully, they get the highest yield. Except, the farmers in this water-short area, most of the times, felt that the water might not be there, so when it is available you must use it. You can show very clearly that, as the water application would go up, the yield would go down, because they would cause water logging at the soil. When you would explain the need to reduce the water application, they'd say, "No, we've got to keep the soil saturated, or we won't have yield at all, or we might lose the water." Somewhere, and they are packed away, I actually wrote a couple of papers and published them in the Secretary's annual report that dealt with improved water management techniques.

Let's go back to a publication in Thailand. I collaborated on a paper in Thailand on the subject of the economics of irrigation development. This was translated into Thai, into Italian, into French, and I think it was even translated into Russian, so I've heard from the U.S. Committee of Irrigation, Drainage, and Flood Control. It's a member of an international body on irrigation and floor control. It was pointing out the fact that you can

spend only so much for investment in irrigation development, that is, you have to have sufficient economic benefits to justify the investment. There are some areas that can be developed for irrigation, and then there are situations, considering the life cycle cost, that would show that the investment should not be made. For example, salinity buildup could destroy the future productivity of the land. Thus, those factors have to be taken into account, and you have to ensure that drainage has to be resolved to make sure the productivity is maintained. We have some of that going on in California today, where salinity buildup is a serious problem, and the irrigation users have to be very careful about that issue.

Now, switching back to proper water management and the Israelis. They are experimenting with evaporation of sea water from lower subsoil to provide moisture to plants. They're just studying everything. They have a water grid for their country. They know water deficient areas and the water surplus areas which can be managed with inter-basin transfers. We in this country just have a terrible time talking about inter-basin transfers. Later on, I'll tell you the story about the second National Water Assessment that I directed. The final report was held up 12 days by the Secretary of the Interior before he signed off, because he wanted to make sure that we didn't recommend inter-basin transfers any place in this study, because they were so politically sensitive. Earlier in my career, in the 1960s, I was involved in one in Colorado River watershed and the Rio Grande, where we tunneled across the Continental Divide to give Albuquerque, New Mexico, much needed water.

There was one thing about Albuquerque that I need to explain, too, that I was involved in. President [Lyndon] Johnson came to office, and Parsons Engineering Company had published a grand scheme about bringing water to the parched Southwest. It was called the Northwest Water Plan (NWWP). We were looking at bringing water from Alaska and [pause] I'm sorry: Canada. I guess some of it does flow in through the southern part of Alaska. The plan was to bring water from Canada down along both sides of the Continental Divide into the United States. Some of the water was to come to New Mexico. Some of it was to go to parts of Arizona, West Texas, and then to California to relieve the Southwest water shortage. Actually, the water was to be applied to more areas than exist now. It was a massive water resource development scheme.

In New Mexico, we worked on the plan, and everything below a certain elevation would be considered for irrigation development. The same was

going to apply to West Texas. But then I left and went to Thailand and Vietnam, and everything was overtaken by other priorities, and the plan was scrapped. But somewhere out in the West in some of the archives of the Bureau of Reclamation, there are several great schemes. I'm sure the Corps of Engineers was in the schemes as well.

Section 80 water policy study

WALKER [cont'd]: Returning now to my time at Reclamation, I got the notion, and even published a couple of articles, on how we could be much more efficient in our water use in the United States. Warren Fairchild asked me to come and work on water policies. I went to the council, and then I got very heavily involved with the Corps of Engineers, because of two particular projects.

One was called a Section 80 Presidential Study, which was an in-depth review of the U.S. Federal water program. It included all aspects of water resources planning: Cost-sharing, the way that we determined benefits from water resource development, discount rates, and consideration of both water quality and water quantity aspects in planning Federal water projects.

This was done for President [Gerald] Ford, and we worked our hearts out on this study. We worked seven days a week. We worked way into the night for about six months. This study was accompanied with draft legislative language to go to Capitol Hill. It was the type of language needed for implementation and was language that would help the Federal program meet national needs. Unfortunately, President Ford was defeated. A few days after the 1976 election, we called the White House and said, "Well, how are going to get the study to the Hill?" The White House person said, "What are you talking about?" We said, "We're talking about the Section 80 study that we got ready for you." He responded, "What study?" That was the end; they didn't want to hear it, and they didn't want to talk about it. He was defeated, and a new crowd was coming to town. They said, "Take it up with them." So that's that.

But, the Section 80 study was used for years, and the Corps of Engineers did pick up some of the recommendations on improved cost-sharing with local governments and beneficiaries picking up some of the costs for flood control. Also, the COE used several recommendations dealing with non-structural approaches in flood plain management. Right after that, on Four Mile Run near Reagan National Airport in Northern Virginia, there used to be a housing area along the stream. Every time we had high water,

you could drive by there and see all the homes with their furniture out on the lawns so it would dry out.

Well, what the COE did was to make the housing area into a park, a different use. All the homes were torn down, which took out all of the structures that were being damaged during each flood. So, it was a different approach from a flood control dam.

The Section 80 study improved cost-sharing policies with the states, water users and the Federal government. It took a better look at flood management and dealing with structural, as well as nonstructural, approaches. The notion of flood insurance playing a role in water resources projects was included. The study also looked at the situation where the environmental impact statements should apply to all decisions in water resources projects, including water treatment plants. The alternatives in water treatment were not being addressed, because there wasn't a requirement to prepare an EIS [Environmental Impact Statement].

The Section 80 study tried to bring together all of the Federal water program, and it's amazing, when you look at it. HUD [Department of Housing and Urban Development] was funding in water programs as well as the Department of Commerce. We didn't even realize that HEW [Department of Health, Education and Welfare] funded water projects, which I think were emergency water projects.

There were so many Federal agencies — thirteen, I believe — involved in water programs that we didn't realize the size of the Federal water program. You had the traditional: The Corps of Engineers, the Bureau of Reclamation, and the Soil Conservation Service — the Big Three as we called them. But then, you went on to the Department of Commerce, HUD, HEW, Department of Transportation (DOT), and EPA [Environmental Protection Agency]. By the time you calculated the amount of Federal money for all the water treatment plants funded by grants, the EPA had a sizeable water program. To my knowledge, the Section 80 study was the first comprehensive program review of the Federal water program made internally.

MOORHUS: Was that actually released publicly?

WALKER: No, but it's probably in the library at Interior, and I'm sure it's in the Corps of Engineers Library. Guys like Ed Dickey and Steve Dola were authors on parts of it. We all collaborated.

MOORHUS: What year did it come out?

WALKER: Let's see.

MOORHUS: 1976?

WALKER: Yes, 1976. It had a number of supporting studies, but it was an extensive effort, an extensive review of the funding for Federal water programs including planning, construction, and operations and maintenance in FY 1975.

MOORHUS: How many people worked on it?

WALKER: There must have been about 20 of us, and we were supported by several IPAs [Intergovernmental Personnel Act appointees] from the University of Georgia [Athens] and Washington State University [Pullman] later on — oh, what's up at Ithaca, New York?

MOORHUS: Cornell?

WALKER: Cornell professors and also Harvard [Cambridge, Massachusetts], because there was that one professor that had just written a recent book on water resources policies. Dr. Maas, he was a very strong supporter of the study. He said it should be undertaken and be a real shakedown of the entire Federal effort in water resources. Actually, there was a tendency to want to put in all of the efforts in a public works program or have a kind of a national resources management effort. At that time, you were getting a lot of the environmental values starting to come in to play which would shape the way Federal projects were going to be developed.

At that time, we were working on what was called the environmental principles and standards to use in water project planning. Good lord, I can't even remember that. It called for dual objectives, but the Office of Management and Budget (OMB) ruled that out. The two objectives — environmental objective and economic objective — were changed so planning was accomplished with an economic objective with environmental impacts considered in the decision process.

The Water Resources Principles and Standards played a role in this in what parts of the program were governed by the principles and standards. But, they had no influence on those that were exempt. You had a lot of the grants and loans outside the principles and standards process and not considered so directly by the Office of Management and Budget [OMB].

MOORHUS: What was your position at the Water Resources Council? You said you were working on policy.

Second National Water Resource Assessment

WALKER: Yes. When I first arrived I was a policy officer for a time, and then I later became the Assistant Director for Water Resources Policy. Then the second assignment that I had while I was there was the second National Water Resource Assessment. When I arrived, the second National Water Resource Assessment was already underway. That was a large effort. I think, when I had a meeting to pull together all the people involved in the second National Water Resource Assessment, we had over 100 people working from the states and from the Federal agencies involved in preparing the assessment.

The purpose was to assess the adequacy of the quantity and quality of our water resources now and out into the future. The base was 1975. That was our first benchmark, and everything was based on 1975 data — water use, water withdrawals, water depletion and United States population. We made projections out to 1985 and to the year 2000, which we're to and beyond.

We addressed 21 water resources regions of the country. There were 19 river basins and two of those regions were Alaska, the whole state, and Hawaii, the whole state. These 21 regions were divided into 106 sub-regions, which were natural resource watersheds into larger river basins. We analyzed the problems and issues facing the water situation in each sub-region. In other words, whether it was ground water depletion, whether it was water quality deterioration — a whole host of problems — the water limitations it would not support, different uses and whether you had a water surplus or a deficiency.

The first National Water Resource Assessment was conducted by and headed up by Bruce Blanchard, who is a good friend of mine. I had no way of knowing that when I read the first assessment after I returned to the States, and that I would ever be in charge of the second National Water

Resource Assessment. By the time I arrived at the Council the assessment was in terrible difficulty. They couldn't pull it together. They had data quality control problems. They had collected something like 3.5 million bits of information. It was poorly organized and poorly categorized, and it wasn't coming up with anything meaningful.

Mr. Fairchild asked me if I would take it over and try to bring some continuity and some structure into what was going on. I refused at least twice, and then one day, he told me, "You're going to have to take it over, because it's getting desperate. OMB is very critical, and some of the agencies are very critical of the situation." I told him that before I agreed my position was that I wanted to bring in three experts to review the progress to date, review the state that we were in, and determine if the assessment could be salvaged. After that, I would bring my recommendation back to him and make my decision.

I selected Dr. Ron North, from the University of Georgia, and Professor Jack Goodwin, head of the Water Institute at the University of Idaho [U of I], and another professor from Washington State University — which is a terrible rival of the U of I — who was a good water resources professional. While I relied on those three, it seemed like I brought someone from Cornell. But maybe I brought him in on the tail end of the review.

I brought them all to Washington, D.C., and we held a workshop for about four days. At the end of the fourth day, I requested their recommendations. They came forth with the fact that the assessment was doable and that it could be brought into some kind of order. Secondly, it's quite meaningful to the water situation for the United States to have this as a documentation. So I went back to Mr. Fairchild and agreed to direct the effort. Let's see, we finally published the report in 1978, so that would be '76.

I didn't have a normal life. I spent all my time trying to control the effort with the help of those four professors plus a large staff element. Some of the staff were part of the problem, so I had to reorganize and reorganize particularly some of the staff out who were the roadblocks. We finally got the assessment back on track, and there were some very capable people who helped get it back into order. We published what was our first kind of a preliminary sound bite of what the assessment was going to show. Many people thought that this was a very good analysis of what it was capable of identifying, and surprisingly, the states agreed with what we wanted to do. Getting the states to agree on anything about water when they're so jealous

of their water rights was not an easy task. Thus there was general agreement they would come up with meaningful recommendations that would have sound influence on the future of water resource management in this country.

We continued to work on the assessment. We did an analysis of each sub-region and region. From that, we prepared a composite of what we were finding, a collective view of the conditions in each region which resulted in a report about two inches thick, plus 21 regional reports. Then we prepared an executive summary that was about 50 pages. I have a copy of the assessment up in my attic, but it would be tremendous effort to go find it. The assessment is in the DOI library, and I'm sure, it's at the Corps. It's in the White House Council on the Environment's library, as I have seen it there.

The thing that I wanted to see the assessment do was: If you identify the problems in a water basin, and then you identify the resources of the Federal government to help resolve the issues within that watershed, and you could harness those resources to resolve the issues in a well-managed approach, Federal departments with the economic and technical support — resourcing and balancing — you should be able to deal very effectively with water resource problems from a Federal and local standpoint. Whether it's quantity, whether it's quality, whether it's minimum flows to maintain the fish and wildlife habitat and everything, you can focus your attention in a coordinated fashion. It never did ever come to that, because about that time, in 1980, I transferred to the Army. I'll tell you how I got there.

The 1977 Western Drought Study

MOORHUS: Okay, but let's finish this up first. Okay?

WALKER: Yes. All right. I might tell one of the very valuable products that came out of the National Water Resource Assessment.

MOORHUS: Okay.

WALKER: This had heavy involvement with the Corps of Engineers. One very valuable byproduct that came out of the second National Water Resource Assessment occurred in 1977. We were called to the White House. I represented the Water Resources Council, and there were representatives from the Corps of Engineers, Interior, Agriculture, and Commerce. General — I can't remember if it was Brigadier or Major General — Drake Wil-

son and I arrived at the White House accompanied by Kyle Shilling of the Water Resources Institute located at Fort Belvoir. We were asked by the staff director of the White House staff to prepare documentation of the 1977 drought in the West, assess the impacts it was causing, and provide recommendations. I can't remember the exact date, but it was a Monday morning, and we worked — they gave us offices in the Old Executive Office Building next to the White House.

We had reports coming in from all the Corps districts, from the states, from the Bureau of Reclamation regions, and from the Soil Conservation Service districts. There were probably other Federal agencies, but I can't remember them. We started preparing a report for the President. It was to be around 50 pages, and it had to have a two-page or less executive summary. We worked until Wednesday, and then Thursday we had a review, a preliminary briefing, with the White House staff. We worked all night Thursday redoing the report, putting it together, and then we had it on President [Jimmy] Carter's desk by the following noon on Friday of that week.

Let's see, by 4:00 o'clock that afternoon, he made an \$850 million decision on — it wasn't relief. It was [pause]

MOORHUS: Assistance?

WALKER: It provided assistance.

MOORHUS: Federal assistance.

WALKER: Federal assistance to the drought in the West. It was a very good documentation. A similar experience had occurred in 1934 in the West, and that had had quite a depressing effect on the West. We did a very good job with the data that we collected from the sources, including the National Assessment data. We could develop priorities to give water for human use first, to save orchards, livestock, and wildlife in that order. Thus, we established the priorities for the water use. After that, when people told me, "We just don't have enough time to produce a report," I say, "Well, Drake Wilson, Kyle Shilling, and I produced one in four and a half days."

MOORHUS: Sufficient to make a major decision.

WALKER: Yes.

MOORHUS: Just the three of you?

WALKER: Well, actually we were supported by a larger team than that. The Corps with its resources brought in typists, draftsmen, and other support people. Several people were reading and summarizing the state reports coming in from the governors' offices, coming in from the Soil Conservation Service and coming in from the Bureau of Reclamation.

MOORHUS: But it was the three of you that shaped the report.

WALKER: Yes. It did show you that you can — now they call that knowledge management — you take all that information, you distill it down, you put it into 50 pages, and then from the 50 pages, you develop a two-page summary.

MOORHUS: With recommendations?

WALKER: With recommendations, yes, in the two pages I think it was probably a fourth of the second page. It had about, oh, five or six recommendations, one of which was to provide the assistance. Actually, we didn't give them the level. We recommended assistance. Then I think we recommended the priority listing that we had set forth in the body of the text some place. I can't remember; it referenced a table that set forth the water resource use priorities.

The thing that came out of the study, and has stayed with me for a long time, is that, in drought monitoring, the experts watched what they called the "Hawaiian High" in the ocean. It's a place in the Pacific Ocean that has a higher temperature than the rest of the ocean. When it travels east and gets up against the West Coast, the Jet Stream will hit it, and the air current is diverted to the North. The rain is spilled in Canada and the northern part of our continental states, and then it comes back down. When the drought period is over, the Hawaiian high, the high temperature area, moves back out near the middle of the Pacific Ocean, and it doesn't distort the Jet Stream as much. One of the scientists came and gave us a short lecture or a sound bite on this Hawaiian High.

MOORHUS: So does the Hawaiian High create the drought?

WALKER: Well, only by the fact that somehow, it's a high temperature area in the ocean water —

MOORHUS: It moves the Jet Stream north.

WALKER: Yes, moves the Jet Stream north.

MOORHUS: Which keeps the water from coming down.

WALKER: It stops the rain from coming in onto the western and southwestern states. But apparently, it occurred in 1934, but they didn't understand it that well. It was so bad that they had to truck in hay and feed for livestock in California and Colorado from other areas, because they were just so impacted by this drought. I'd heard people talk about it when I was young, but I didn't know that it had been quite that bad.

MOORHUS: If the drought is connected with the Hawaiian High, then does the location of the Hawaiian High predict the drought?

WALKER: Yes, it helps. That's what the meteorologists came up with to predict the cause, and they said that they needed to watch this aspect. I think that the last two years we've had very wet years here, but prior to that, the West had had some severe dry periods. I'm not into the water business now, and I haven't been working with anyone for some time. I don't know whether or not they are continuing to study the Hawaiian High. But, the scientist at that time believed it was the main cause. I can't even remember his name. I can't remember, but it seemed as though it was someone from the Weather Bureau. We had a short session with him, and he told us about this phenomenon.

Anyway, documenting the 1977 drought was a lesson that you can produce something very quickly in sweatshop conditions. After that, when I was faced with short suspenses and deadlines, we would get in and craft something very quickly. As long as the document (memo, letter, or short report) was straightforward, made sense, and had sound recommendations, it usually turned out to meet our objectives.

Reflections on Water Resources Council experience

MOORHUS: Did your experience with that small working group have an impact on the larger assessment that you were working on?

WALKER: Yes, it actually demonstrated to me that we could pull specific information from the national assessment and use for a very focused condition. It also gave me confidence in what we had been collecting. It was actually showing water use and how it had to be cut back, particularly for irrigation in some of the areas of California. The information showed how much water supplies had been reduced and how much more we probably could tolerate by knowing municipality uses and withdrawals. That is, for example, how much San Diego and San Francisco were withdrawing from the surface water supplies. Even in Marin County, California, with very focused information we could show where they were suffering and how much had to be diverted from some agricultural use for human use and for keeping their vineyards that they were trying to save as well as other types of orchards.

There were several other things about the data in the National Water Resource Assessment that had to be checked. When I did my first quality review, I did some very simple calculations on the Columbia River Basin, which I had grown up in. I found that somehow in the National Assessment data there was more water in the Columbia than had been documented by the data collected by the U.S. Geological Service (USGS). Also, since I'd worked on the Rio Grande Basin, and there should have been a little more water in the Rio Grande that flowed into the Gulf of Mexico than I had known about. So I asked them to do a double check on those two basins that I had some knowledge about.

Lo and behold, the Rio Grande, as it flows into the Gulf, had had two flood bypasses, and they hadn't measured when it had flooded, and they miscalculated the flow. So they recalculated the flows for the Rio Grande and found that they were in agreement with the State of Texas and USGS data. The new findings represented a fairly reasonable flow. In the Columbia River Basin they had miscalculated the quantities, because the flows were to have been on the basis of a million gallons per day flow. Somehow, they had used cubic feet per second, which gave a considerable distortion and put a lot more water in the river than had ever been experienced. So they went through and reworked their calculations for the Columbia Basin.

I said "Okay, out of the 21 water resources regions, I picked two at random, and they were both wrong. So you'd better all go back and take your data and recheck it." When they were finished, we spot-checked a couple others, and they seemed to be reasonable. I got some of the U.S. Geological Service experts to help to make sure we were not too far off. The problem

was, if the base was not right, and then you started making calculations and projections for what the water use would be in '85 and then 2000 could be very misleading. Population growth would show areas requiring greater uses of water. Thus, municipality uses would be expected to increase relative to the other users of water and create competition for a limited quantity.

Now the sad part of it is, I left the Water Resources Council in '80, and about 1990, OMB was requested to review the situation to see if there was a need to conduct a third national water assessment. OMB didn't want to do another assessment, but they had to review the possibility of conducting it again, because they'd had so many requests. So I met with OMB and gave my views about why it should be redone. I explained that we could take a look at how far off you were in 1985 and 2000 and determine how accurate our projections were. With this information, you would readjust the calculations so that better predictions out to 2020 and 2035 could be made. These new forecasts could guide our Federal water programs a little bit better.

Out of a group of fifteen people, two or three supported me, but it just didn't have enough support to carry. OMB weren't getting that much pressure. It's sad that we haven't conducted a third National Water Resource Assessment. We didn't do it. However, based on 2000 data and projected out to 2020 and 2035, the United States could see if we're on the right track and our Federal programs and policies could be adjusted accordingly. Israel is certainly preparing periodic assessments as well as other countries. Of course, Israel's whole economy is really based on how efficiently they use their water; that is why they are certainly doing it. I think here, for just our own well-being and national strategies, we should be taking a serious look at the adequacy of our water from a quality and quantity standpoint.

In some places, you can detect that the water quality has increased. My wife and I, when we first arrived in the Washington, D.C., area — no, it was when I was going through the orientation program in 1966 — we took a boat ride on the Potomac. We went down river 17 miles, and you didn't see any water skiing. You didn't see any fishing. In fact, we were told in the boat that if we fell in the river, we'd have to go get a tetanus shot, because it was so foul. You'd see dead fish. It was so foul smelling. Then a few years ago, about 1990, we took the same boat ride, and the fish were jumping. You did see water skiing. Not that I'd ever eat a fish from there still

[chuckle], but fish have returned. We did not see one dead fish. You would see people fishing along the side of the river. We are making progress, but not quite as fast as I think we are capable of.

I offered a scheme once to the Environmental Protection Agency that, in working with the Corps of Engineers, the Soil Conservation Service, the Geological Survey and EPA, you'd start at the top of a watershed and do a stream reach index system. Hopefully, the water's pristine down to a certain level, but if the water quality changed, you benchmark where the quality changes. Then you work on a certain reach to find out how the water is being influenced and what is causing the damage. You clean that up with water treatment or use whatever remedy that is needed. Once the problem is solved, then you move on downstream and start again. By the time you get to the bottom of your watershed, you've made a great deal of headway. Unfortunately, the people that would really back it and make it work at EPA, and since there were not any resource management people, generally only attorneys, they decided—I hope you are not an attorney by background [pause]...

MOORHUS: No.

WALKER: They decided it's better to fine and penalize people than to manage the water using an improved management scheme. I lost the battle there, but it was a good attempt. We were close to getting a favorable decision. It was sad, as the White House Council on Environmental Quality liked it. In fact, the Council said, "Let's take it over to EPA," so we did. Then, at that time, there was kind of a battle going on between the chairman of the Council and EPA and EPA prevailed.

MOORHUS: What year was that?

WALKER: This was about 1979, before I went to the Army. Here again, after I went to the Army in 1980, and without anyone pushing it, the concept just died. I had other things to do when I got to the Army, so I didn't pursue it.

MOORHUS: Maybe we should stop at this point, given the time, and pick up next time with your going to the Army.

WALKER: All right.

Interlude: additional recollections of life in Thailand

MOORHUS: Why don't you start today with anything that you would like to add to what we talked about last time.

WALKER: Well, last time you had asked the question of living in Thailand and Laos, if there was any sort of resentment or anything that had kind of anti-American feeling. I recalled an incident that kind of described our particular situation there, and it was very favorable. I worked in a lot of the villages in Northeast Thailand. One particular time, my wife traveled with us, and we went out to a village we had been to several times. Our normal practice was to meet with the village head man, because there's a close-knit society at each village. If you're out trying to meet individual villagers, other than the village head man, there's a lot of suspicion going on of why you're meeting with them and not him.

So we followed the proper protocol and went and visited the head man. My wife was with us, and all the women and children were quite curious at first. Then all of a sudden, they disappeared. We didn't quite understand the significance of that, but we continued our meeting. We lined out our work to meet with others in the village and started our interviews with them. After a while, all of the children and all the women returned. They were freshly bathed, and they had changed to their better clothes. They had never seen an American woman, so out of respect they did it for my wife, and for me as well.

To the Thais particularly, bathing is very important, and they did this regularly. I was always quite impressed with that. After they returned, my wife met with them, and we went on and finished our work. That kind of situation I will always remember. My wife finally came with me, and that was the type of respect that the Thai village women had for the first American woman that they'd ever seen.

MOORHUS: Did your wife travel with you very often?

WALKER: Occasionally, and she traveled to Laos with me a few times. If it were sensitive, we wouldn't include her. She adjusted very well to the overseas living, and it was important in being so far from home and in a different country. By and large, the Thai people and the eleven Thai professionals that worked with me had a great deal of respect for both of us.

It was quite an experience being in Thailand and Laos. That was one of the things I had just overlooked about it. It comes to mind when you think of ways that they'd tried to show their appreciation for what you were doing in their country. So that is what I will remember about my time living overseas.

Summary thoughts on early federal service

MOORHUS: Yes. Good. You said you would also like to talk a little bit about your first Federal service before we moved to your working for the Department of the Army.

WALKER: Yes, I thought maybe I'd just do a chronological order of my progression up through the Federal service. When I was in college, I worked for the Department of Agriculture at the summer break as a wage grade person, as they called it. You were not a professional, but you just worked for an hourly wage. We worked in what was called then the Wheat Allotment Program. So I did this during my sophomore, junior, and senior years in college.

Then when I was in graduate school, I was hired by the Department of Agriculture as a GS-3, and my purpose was to be an interviewer. We had to go out and interview elevator operators, who provided the storage of all the grain products in the Pacific Northwest and then the shipping or milling all of the grains that were in storage. I did that. Then after I finished graduate school, I had many offers at the GS-7 level. And, I actually had two offers from the Department of the Interior, where I qualified as a GS-9. The CIA had interviewed me as well, and their offer was to match the highest level I had received from others. After a great deal of thought and consideration, I decided to go with the Department of the Interior in Albuquerque, New Mexico.

I arrived there on February 4, 1963, as a very new GS-9, as a water resource economist, and then two years later I was promoted to a GS-11. A year and a half later, I was selected on a team to go to Thailand, a professional team, and I was promoted to GS-12. However, the rating changed when I entered the State Department, because it went from a GS-12 to a Foreign Service Officer, FSO, at the FS-5 level, which was about the same as the middle step of the GS-12 salary level.

During my time with the State Department, I stayed at the same grade level. Then when I came back to Washington, D.C., in 1971, I was pro-

moted to a GS-13. Two years later, I was promoted to a GS-14. Then, let's see. About one and a half years later, I was promoted to a GS-15 when I transferred to the U.S. Water Resources Council. In 1978 I was promoted to a GS-16. Soon after that time, the Civil Service Commission converted to the Senior Executive Service, and I became an SES-4 equivalent to the GS-16.

3 Hired by the Army

Overview of career trajectory

WALKER [cont'd]: I transferred to the Department of the Army in 1980 as an SES-4 and thought that that was maybe the highest that I would ever achieve. Two years later, I was promoted to an SES-5 with no change in title. In 1991 the Assistant Secretary told me that there was one vacancy in the SES-6 level and that I had been recommended. Shortly thereafter, I was informed that I had been promoted. So I actually achieved the thing I'd never thought I'd ever get to when I was down at a GS-12 or GS-9 level. I didn't believe that I'd ever get up there. So finally then, in the last four years of my career, I served at the SES-6, the equivalent to the former GS-18 rating where I first started.

MOORHUS: That's the highest level.

WALKER: That's the highest possible level for a career civil servant. Then as we talk later about levels of responsibility, I'll refer back to this order of obligations.

MOORHUS: That's very helpful and important to have on the record. Tell me then how it is that you happened to go to the Department of the Army.

Early Army environmental work

WALKER: Well, I was at the U.S. Water Resources Council and the Chairman of the Council is the Secretary of the Interior. The Secretary of the Army was represented on the Council. The Secretary at the time was represented by an Assistant Secretary for Civil Works [ASA(CW)], which was the Corps of Engineers. I had been involved, and the Corps had been deeply involved with me, on the Presidential Section 80 Study, which was the study of the U.S. Water Resources Program. Then on the second National Water Resource Assessment, the Corps was quite helpful in the development of the information coming into this study and also very helpful in analyzing and preparing the results.

Let's see. In January 1980, I was selected to attend the Federal Executive Institute in Charlottesville, Virginia. I didn't take the six-week program but was in the four-week program in the first class of 1980. A Deputy As-

sistant Secretary of the Army, at that time called Installations, Logistics and Financial Management [ASA(IL&FM)], was in the class. I can't remember how they did the acronym for that, but it involved those three functions. We had a lot of participation while going through the institute program with all the skits and individual presentations that you have to be part of. The two of us became very well acquainted.

MOORHUS: What was his name?

WALKER: I'll probably remember it. I'll have to pull out the class notes. But he was the Deputy Assistant Secretary. He said, "You know, we're looking for someone to run our environmental program in the Army." It was a new start, because it was usually never managed at the Army Secretariat level by one person. "Many of the problems are being dealt with by one of the assistant secretaries personally, or by the Undersecretary of the Army at a very high level. Army needs to have someone to come in and take the program over and run it like it should be run, by a Deputy Assistant Secretary."

During the time at the Institute we talked a bit about Army, and then I came back to my job at the Water Resources Council. Then about three weeks later, he called and asked, "Have you thought about this position over here?" I said, "Yes, I have. I've been meaning to call you." So I went over for an interview with the Assistant Secretary. After that, they decided that I should make a lateral transfer to the Secretary of the Army's Office and take over as the Deputy Assistant Secretary for Environment, Safety and Occupational Health.

MOORHUS: And that was a new position?

WALKER: It was a newly-created position. The first person that they had was a person near retirement, and he just didn't understand the nature of the position very well. He became ill, and then he retired. They said, "We want someone to come in, handle it and deal with all the aspects." I went back and I thought, "You know, this is going to be quite a challenge." So I decided to visit people in other departments who held similar positions. I knew the name of my counterpart in the Department of the Interior, a similar position that was in the Army. I also knew someone in the Department of Agriculture, who had a similar position with similar responsibilities. In Housing and Urban Development, I knew a person there. Then I went over and talked to someone at EPA whom I can't recall. But I made

my rounds before I accepted the position and talked to them to see how they ran their operations and how they dealt with program issues.

I was still uneasy a little bit. I thought I could handle the environmental program all right, but I was a little concerned about safety and occupational health. So I summarized what I had gathered from all of my interviews with counterparts in the other departments and went for another interview with the Assistant Secretary. I told him that this is what I had done. I brought up the notes that I made on how I could deal with and handle the different aspects of the programs, but I said, "I'm a little uneasy about the occupational health side and the safety side." He said, "Well, here's how the Army operates. You have on your staff a safety specialist, and you also have a major, who is a medical service officer, on your staff. You also have another officer who is a full colonel. He is your senior person to help you in the environmental area." He said, "If you're not sure of a lot of things, you usually follow what they recommend. When you're comfortable and have the experience, you can handle all of the programs by yourself."

So, with that understanding, I said, "Well, I'll take a job." Then I went on up as they wanted me to interview the person who had that same responsibility up in the Secretary of Defense's office, George Marienthal at that time. I interviewed him. I told him what I had done in going around and talking to my counterparts in the other departments. Actually, they were more his counterparts than they were mine, but they still had the same functions as I would have. He gave me a strong recommendation about coming with the Army, so I accepted the position.

Initial challenges

WALKER [cont'd]: That was about April 20, 1980. I retired January 1, 1996, so I was there almost sixteen years. They had a challenge in the back of their minds, and they finally told me about it a little later. They were challenging me to see if I could come in and run the program. Then if I didn't, they were going to break the office up and put it in different places. They probably would have placed the environment with the Deputy Assistant Secretary for Housing. The safety would probably go to the Deputy Assistant Secretary for Logistics, and the Occupational Health would probably go over to the personnel side, Manpower and Reserve Affairs of the Army Secretariat. But, I held the programs together for that long.

Noise at Fort Sill

WALKER [cont'd]: Let's see, the first year there, I received a \$2,000 award, because I kept the Army out of a very serious situation on Love Canal in New York State. I guess one of the benefits after interviewing all my counterparts, I could call them if we had a situation that involved a particular department, and I did call Interior several times. Also, one came up with HUD that was very interesting. A situation came up at Fort Sill [Oklahoma]. We had what was called then, with all the artillery practicing there that went on, noise contours of Zones 1, 2, and 3. Well, the Zone 2 went off the post and included part of the city of Lawton, Oklahoma. This caused HUD to stop all Federal financial assistance for housing in the area and recommended to other financial institutions that there be no funding for the housing in the area. That got the mayor totally upset. When the Secretary had had about all the complaints from Oklahoma that he could stand, he called me and said, "You've got to go out and see what's going on at Fort Sill." So I called my friend at HUD, and I said, "We'll pay your expenses to travel to Fort Sill with me. We've got to get out there and see what we can do."

We went to Lawton and met with the mayor and met with the commander of Fort Sill. I can't remember his name, but he was a two-star general. We met with him and came up with a resolution for the problem where HUD would reinstate support for Veterans Administration (VA) loans and FHA [Federal Housing Administration] loans. I guess that demonstrates the value of knowing your counterparts in the other departments.

As it worked out, on the military side, Fort Sill moved two of the firing points, which brought the Zone 2 contour back on the installation. We encouraged the city and the county to allow a zone for only activities near the post that would be not sensitive to noise. So my interviews paid off in the long run, because I didn't know the HUD individual before I went to interview him. Only through a friend from HUD who worked at the Council was I able to go to HUD, make the contact, and interview him, which worked out very well for an Army problem.

MOORHUS: Tell me about the situation when you arrived. Who were the people you were working with? How were things structured? What were the issues you were facing?

Army regulatory compliance issues

WALKER: Well, there was a tremendous pressure on the environmental program, because Army did not have a good record in compliance. There was a strong attitude in the Army that environmental problems were a waste of time. Environmental concerns were all right for the people off the post and away from Army activities, but for the Army activities on installations, Army commanders wanted to run their own show. One colonel even told me he was too busy defending the country to worry about having anything to do with the environment, even though there were Federal laws to protect the environmental quality.

To get a sense of what I had to deal with, I had wanted to first identify how much money we were spending in the environmental program. It was about \$250 million in 1980, mostly for water treatment projects. For comparison, when I retired, it was about \$1.4 billion for the Army's environmental program. In 1980 we knew that we had a lot of hard work to do. I started out trying to, and actually, with the help of the Secretary of Defense's Environmental Office, we started having a series of, every six months, reports on our notices of violation. These reports dealt with not complying with air emissions, not complying with hazardous waste regulation, and not complying with the water quality treatment standards of each installation. Then we looked at our funding profile of how much the installations were spending and how many notices of violation were being issued, as well as fine and penalties. This was to get a sense of which installations really had serious problems and the kinds of problems.

At the same time we were developing our program plan that was just emerging or we were right on the edge of contamination clean-up issues. I guess it was two years later that the Superfund was established, which placed particular liability on any contamination that might be getting off Army installations and also pressure that contamination on post had to be cleaned up.

MOORHUS: Who was providing the data to you about the problems on the installations?

WALKER: Well, we had two areas that we relied on. The Corps of Engineers helped, through their assistance programs to the Army, and then the second came from — what we had was an organization called U.S. Army Hazardous and Toxic Materials Agency [USATHAMA, U.S. Army Toxic and Hazardous Materials Agency] at Aberdeen Proving Ground at the

Edgewood Arsenal [Maryland]. That was the forerunner of the Army's Environmental Center. But the Corps was keeping records particularly on the water treatment aspects through the public works facilities on each installation. In addition, the Army Environmental Hygiene Agency did a lot of the air emission determinations and documented violations at the installations.

So we had the Corps of Engineers, USATHAMA, and the Army Environmental Hygiene Agency, which was co-located, as well, at Aberdeen Proving Ground. That gave us the basic data that we used in reporting to the Secretary of Defense's Office every six months.

MOORHUS: You worked directly for —

WALKER: The Assistant Secretary for, at that time, it was Installations, Logistics, and Financial Management.

MOORHUS: And who was that person in 1980?

WALKER: It was Mr. Alan Gibbs. It wasn't Joe Gibbs, like the coach [of the Washington Redskins].

MOORHUS: Well, if this was in April of '80, then Carter was still president.

WALKER: Carter was still president. Of course, there at the end of the year, it gives you another challenge. At least that's the way I started off.

MOORHUS: With reporting to that Assistant Secretary.

WALKER: Yes.

MOORHUS: Who was the Secretary of the Army at that time then?

WALKER: Mr. [Clifford] Alexander.

MOORHUS: Okay.

WALKER: Then I think the Assistant Secretary for Civil Works was — I want to say [Michael] Blumenfeld. He was the one that was on the Water Resources Council. But he was really the one that solidified my coming

there, because Mr. Gibbs called him. They were very good friends. He called him and asked him if he knew anything about me. He said, "He's a good solid person," so that also solidified my coming to the Army.

Political dynamics

MOORHUS: Then within a year after you started, you went through the first of several political upheavals and changes of personnel.

WALKER: Yes, it was my second — the Director of the Water Resources Council was fairly political. Even though it was supposed to be a non-political job, it was. He was a very loyal Republican in the Ford Administration. He left — let's see, he had left, and then a Democratic person had taken over during the Carter years. Prior to that, I worked for Warren Fairchild, who was a political appointee. He became the director, but when he was at the Bureau of Reclamation in the Department of the Interior, he was a political appointee, the assistant commissioner over planning. So that was my first experience working for political appointees.

You had to get used to the fact that they wouldn't stay around. They would leave, and there would be change. The total shocker was that — it even came a little earlier than that. I came to Washington during the end of President [Richard] Nixon's first term. Then he was reelected, and the Assistant Secretary that we were working for in the Department of the Interior went around wearing a button saying "Four More Years." Several of them did, and all their resignations were picked up. President Nixon changed all of the people we had been working with in Interior. That was my first shock. It just had been a short time, and then they were all replaced.

Most of them stayed on during the Ford Administration. But then I worked through the Carter Administration. An SES career position is usually in a general classified position, which means it can be made into a political position. Well, my job, when I went to the Army, was in a general position, and I was concerned. I decided this might be a little tricky, going from the Carter Administration to the [Ronald] Reagan Administration.

I thought about it. You always keep your options open to see what might happen to you. If they wanted to make it political, they could offer you a GS-15 some place, and if you turned it down, then you had to leave Federal service. I think that was the practice at the time. So I worried and wondered what was going to happen. It turned out the Reagan Administration selected Pete Bonner, who still lives here in my neighborhood. In fact,

when he came to the Army, I suddenly found out that he lived in my area, and he's a neighbor of a very good friend of mine who was on the Public Works Committee in the Senate. When Mr. Bonner took over the position, I had actually met him at a social gathering at the home of my friend, Proctor Jones, who was staff director on the Hill for the Public Works Committee. So I made it through the first big change that I had to weather during turnovers resulting from elections.

Then it was about the second year I was at the Army I was called to testify before Congressional committees. It was about what we were doing about cleanup at Army installations. It was just getting started, our cleanup program. We were just getting it under way, and it was very controversial. There were a lot of unknowns about how to go about a strategic cleanup at an installation and about what you had to do about ground water contamination and what to do about soil contamination. It was not clear. EPA was unsure as well as to about how these problems should be addressed.

Origins of Superfund and DERA

WALKER [cont'd]: After a year of that first testimony, which told about Army's assessment of our problem, the Congress passed the Superfund, which was called CERCLA [Comprehensive Environmental Response and Liability Act]. It was called the Basic Superfund. At that time, we were getting so many problems that were cropping up at our Army installations.

In Pennsylvania, we had places where Army provided bottled water because people near the installation were finding terrible contamination in the ground water. At Rocky Mountain Arsenal [Commerce City, Colorado], they found a serious contamination going off post. I can't even remember the acronym. It was a byproduct of the neutralization of chemical artillery rounds plus some chemicals of Shell Oil Company going off the installation. We quickly did some remediation to stop the water from going off the installation, which was possible in that particular ground water regime. We put in a clay barrier and got the water stopped. Then we pumped the water and treated it. Down gradient, we re-injected the treated water before it got off post on our own Army property into the subsurface as clean water.

But these conditions were just occurring all over. Out in California, we had two or three locations where we were furnishing bottled water to households and wouldn't let them drink their household water. With the basis of the Superfund, Congress had already established a particular fund that

would deal with cleanup and contamination. We decided, with the help of a couple of attorneys, to set up an Army fund, and then it grew into what was the Defense Environmental Restoration Account, the DERA Account. Pretty much, it was our crafting legislation with a member of [Alaska] Senator [Ted] Stevens' staff.

Army drafted the basic legislation for the DERA, and it was approved by OSD [Office of the Secretary of Defense]. Thus, we started a centralized fund within the Department of Defense that would deal with past contamination problems which we called the Restoration Program. It was really the Army's cleanup program.

MOORHUS: This was congressionally funded?

WALKER: Yes, from then on, it was congressionally funded, and it continued to grow to where — I think for all of the services right now, it's slightly over \$1 billion or \$1.2 billion. The Army normally gets \$400 million each year of the DERA fund for its active sites. Later on, we'll talk about the formerly-used sites.

This was the beginning of the DERA program, and we participated in that very heavily. Actually, we gave more authority to the USATHAMA in working with the Corps of Engineers to do a lot of the study effort as well as the physical remediation work that needed to be done.

MOORHUS: Who did you work with at the Corps of Engineers? Were you working with the Assistant Chief of Engineers in the Pentagon?

WALKER: Yes, we worked with the Assistant Chief and also the Office of Military Programs in the COE headquarters. There was an Assistant Chief of Engineers for Military Programs over there. Who it was at the time I can't remember. But a person in that office, a deputy by the name of Al Carton, was a very famous person. Actually, he's the epitome of a good civil servant. Maybe you've interviewed him.

MOORHUS: I know him, yes.

WALKER: Well he is. He's very solid, and he always could keep everything straight. When you had very difficult problems, you called Al to work the issue. I think it was about that time when Vald Heiberg was the Chief of Engineers. For the two-star general over at Military Programs, I can't

remember, but Al was the key. We worked through Al. If we had something that was really serious, we got Al to do it.

Response to growing contamination problems

WALKER [cont'd]: I have a tendency to be a little hands-on. I would go in and try to formulate the policies, make sure they were getting sound procedures in place, and also do what work I needed to do with Congress. If a Congressional member had a problem in his or her district, I usually went out and saw the problem first-hand. At Cornhusker Army Ammunition Plant [Grand Island, Nebraska], Congresswoman Virginia Smith was a very strong lady in their delegation. She had one of our plants, the Cornhusker Army Ammunition Plant, that had caused considerable contamination in the ground water. We went out and literally walked in the flooded basements to see where the ground water was coming from to fully understand the problem.

Then we came back and formulated approaches to dealing with the situation at the plant. First of all, the immediate thing was to get bottled water to the people so they wouldn't be using their drinking water. Second, we put in a permanent safe water supply, and then went on post to see how we could stop migration of the contamination. Usually the first thing to do was actually get the contamination out of the ground, which we did and then had it incinerated. It was a sludge pile that had been leaking old nitrates into the ground water, so it was a bad thing for drinking water supplies.

Every post had problems. We had minor problems at our troop installations, but particularly all of the industrial installations had serious contamination problems. They had 60 industrial plants, and all of them had one or more forms of contamination. Some of them were more serious. Then came the National Priority List issued by the Environmental Protection Agency. I think almost 35 of some 60 plants were on the National Priority List. That gave us a priority listing for Army installations, because they gave a hazard ranking to all the installations. Rocky Mountain Arsenal was first, and Twin Cities Army Ammunition Plant [Minnesota] was second. I agreed with the rankings, even as all the criticism that it was not being thorough enough. The ratings were consistent with what I observed at our installations.

Early Army environmental proponents and leaders

WALKER [cont'd]: I worked with the EPA very closely to see what we could do, even though we were supposed to be adversaries. They were regulators, and we were the regulatee. Some of what had been going on at military properties couldn't be condoned. I mean, it was not protection of environmental quality, and surprisingly, the Assistant Secretary at the time said we shouldn't be polluting people's ground water. He had had a member of the family die of cancer, so he stood by me all the time.

MOORHUS: And who was he?

WALKER: A person by the name of Pat Hillier. He became the Assistant Secretary when Mr. Bonner departed after about two years to the Reagan Administration. He was very strong, and he would not listen to the Army staff who came in and complained bitterly about the fact that, "You're putting too much priority on the environmental programs." But it was just fundamental, and most of the people started buying the fact that safe water and clean air were needed.

At about this same time, I started, every two years, having an environmental leadership conference to focus on our issues. We tried to have a few installations represented there, all of the major commands [MACOMs], and then the special interest groups in the Army — USATHAMA, Army Environmental Hygiene Agency and the Corps. We'd have usually 100 pretty carefully picked people to bring issues to the table and then to try to formulate an environmental agenda. Also, I started the preparation of five-year accomplishment reports that fed into the program direction as well.

MOORHUS: You mentioned the Assistant Secretary. What kind of interest did the various Secretaries have in the environmental issues?

WALKER: Well, they didn't like adverse publicity is one thing. It doesn't do well for you when you get up and read in the *Washington Post* about how bad your environmental program is or your safety program, for that matter. Some of them had a genuine feel for environmental quality. For a long time during the Reagan Administration and then into the Bush Senior Administration, Secretary John Marsh was a very strong advocate of the environmental program. In fact, we had him speak at one of the early environmental leadership conferences.

Just an example of how they react is that Mr. Marsh had been a Congressman from Virginia, I think, out in maybe the Leesburg area, from that district. We had an incident which involved the safety program. We kept having instances happen down at Radford Army Ammunition Plant [Virginia]. Every so often, there would be an explosion there. Sometimes fatalities, injuries, and work stoppage were reported in the *Post*. I guess, after about the third one, he said, "You had better go down and see what is going on at the Radford plant."

So I requested a general report of what the situation was. I took it with me, and I can't remember exactly why, but I asked the General Counsel of the Army, Mrs. Susan Crawford, to accompany me on the trip. It's a contractor-operated plant, and at the time Hercules Powder Company [New York], which was quite a strong and good organization, was the operator. It is the only military plant that produces basic explosives and propellants. It is key to our whole ammunition supply. So we went down and were given an overview of their safety program. We asked them what their countermeasures and fixes were to get the accident rate straightened out, as it looked like there were serious management flaws. To this day, I remember this statement. At the end of the visit, she said, "We'll be back in 30 days. If things aren't straightened out, we're going to have to review your contract." There was a dead silence in the room.

They thought about it for a little while, and then the chief person for Hercules Powder Company said, "We'll have the fixes for you in 30 days," so we left. In 30 days, we went back, and sure enough, they had great fixes to the program. Attention to detail was just a small item. They had been using the plant for management trainees and then sending them off to manage other plants after they had on-the-job training at Radford. It was one weakness in their system, plus the fact that they brought in some stronger safety specialists to improve the safety program.

Those are the things that the Army leadership watched in the newspaper. We solved the problem since news of Marsh's home state was finding its way into the newspaper. But he was a very strong advocate for both safety and environment. We issued two — I should back up just a moment. In about 1984, each year we started selecting three installations, and they were given Secretary awards on the quality of their environmental programs. You had a winner, a first runner-up, and a second runner-up. After a couple years, we changed the process slightly. We just had the troop installations compete one year and then had the industrial installations

compete the next year. So this put the installations on the same basis of competition, because it was difficult to always sort out the nature of the problems and the solutions used to solve problems among all of the installations. Troop installations always had fewer contamination problems. So we changed to improve the selection process.

On the first award plaque, Secretary Marsh wanted a quote above where he signed the plaque from a famous conservation poet that had something to say about the environment from a military standpoint. Well, we looked and we looked and even consulted a few universities and could not find a quote he liked. Finally, one captain came up with the quote. We all looked at it and we said, "That's a perfect quote." So we put "Anonymous" down at the bottom [laughter] and sent it on up to him. We had two others just as a choice, but we recommended the first one, and he agreed with that. So that went on all of his plaques from then on, but it was written by an Army captain about 2:00 o'clock in the Pentagon library in the middle of the night.

It had something to do with the notion that the environment has to be worthwhile defending. I can't remember the exact words. We could go back and find one of the old plaques. I probably have one some place. But it was just the agony of going through the process. He rejected several of our selected quotes, and we had some well-known poets. The quotes could never bring the environmental and the military aspects together. In the defense of your nation, you'll defend a good environment, or something like that. I can't remember.

So he took it to heart about the environment. He was one of the people we could go to for support. I had to go to the Hill with him several times, and two or three times on the Hill, he introduced me as having the best technical mind in the Army. But I can't say that. Maybe if he had qualified it a little more, in regard to the environmental, safety, and occupational health or a little more I could, but he would always do that. He was a good Secretary. I guess he has the record for having the longest term in office. So I had the opportunity to work with many Secretaries. I always worked for and was rated by the Assistant Secretaries, but I had opportunities to serve directly with the Secretaries.

Early successes and program development

Redstone Arsenal

WALKER [cont'd]: The Army Environmental program continued to grow and mature to the point where we matured enough that we could effectively take on a couple of our big contamination projects. I guess the following will explain our approach. Our first situation was down at Huntsville, Alabama, at the Redstone Arsenal. Olin Corporation had dumped DDT [dichlorodiphenyltrichloroethane] residue into a stream that ran into the nearby Tennessee River. They dumped around 900 tons of this residue (rejected poor quality batches). It washed down to the river that went by the little town of Triana, Alabama. The plant was located on the Redstone Arsenal, but then most of the contamination washed off on down to just about this town.

The people living in the little town of Triana did a lot of fishing in the river, and they caught a lot of catfish. Several citizens had extremely high body content of DDT. Every time they would have a death in that little town, they would send the death notice to OMB, and OMB would send the death notice to me, telling me, "You've got a problem down there." So we hastily formed a team, got down there, and it was the same thing. We advised people not to eat the catfish until we could figure out what was going on, particularly in that area.

We got the Corps of Engineers to quickly do an assessment of what it would take to clean up this residue. They said it would take about \$4 million to clean up the residue on post and at least \$110 million off post. Our basic philosophy for contamination cleanup was that the person who is responsible for the mess is the one that has to clean it up. Just in that simple of terms: "You made the mess, you clean it up." So it was Olin Corporation that had done it. They had not sold the DDT powder or insecticide to the Army, but they had sold it to a commercial market. Some of the liability was on the Army, because it was coming from an Army installation.

We quickly cleaned up everything that was on the Army installation, and then we filed a lawsuit against Olin Corporation, and they agreed to settle out of court after they obtained an EPA-approved remedy. The Corps and the Army Secretariat reviewed the remedy and agreed with the settlement. They were able to go in and do the remediation in compliance with the EPA and the State of Alabama for something like \$35 million and established a \$5 million trust fund for anyone that had been harmed by DDT, a

health fund that they could draw from. That was our first successful cleanup, and now, you don't even hear anything more about that. It's settled, and it's over. It was a matter of — in just a few years, Olin had all the DDT levels in the river well below the standard established by EPA. In fact, I think DDT is no longer detected in the area.

Rocky Mountain Arsenal

WALKER [cont'd]: Our next big effort was what to do about Rocky Mountain Arsenal, because it was a joint problem between Army and Shell. Army had produced chemical weapons on the arsenal since World War II, until it was closed in the late 1970s. The Shell Oil Company, after World War II, leased much of the plant to manufacture farm chemicals as part of their chemical program. Some of the chemicals from Shell and the Army were disposed of in several basins. One in particular was Basin F, which had a reputation of its own.

We looked at the situation. We had had estimates of up to \$8 billion to clean it up. We also had some estimates that cleanup would be down to about \$2 to \$4 billion. We launched, here again, a basic study, but while we were doing the basic study to gain some understanding of it, we became more and more convinced that Shell was very seriously involved with the contamination. We went and met with Shell. Without getting into a litigious mode, we wanted to see how much they would contribute for the cleanup. The first offer was \$10 million.

MOORHUS: Oh, my.

WALKER: I didn't even call back for instructions. I declined their offer, and we left. We came back about four months later, which must have been in '85 or around that time. It was December, because we had to file before the end of a time limit on filing for claims as set forth in the Superfund. So we sued Shell for natural resource damages and chemical contamination for right around \$2 billion. It was \$1.99-something billion. Very soon, to keep it from going to court, we entered into a settlement negotiation with Shell. As I recall, we settled out of court; they would pay 50 percent of the cost up to \$500 million, 35 percent of the cleanup costs between \$500 million and \$700 million, and then 20 percent of anything above that.

Shell and the Army established a working agreement that we would stay together as partners, and we would start the remediation. We had a schedule to go through, based on all of our studies, to come up with a plan that

EPA and the State of Colorado would approve. The length of time — it finally was settled just before I retired. The agreed-to plan was completed by all parties in May of 1995.

But a lot of cleanup effort had already gone on by that time, because there were special areas that we just had to deal with. One was the Basin F. It was a large lagoon, and it had 250 million gallons of storage capacity. Every type of waste had been dumped there from the chemical munitions manufacturing and Shell's activities. It was a horrible situation, where wildlife would fly in and never fly out. So we had sound machines, and we had light machines flashing and everything to keep them away. It was even so toxic that once when we were looking at the pond a bird flew down, didn't like the odor, started back up, and it perished at the edge of the pond. So it was a horrible pond.

Sometime, it had to be in the late '80s, '88 or '89, I was watching the news, and a plane had crashed at the Stapleton Airport [Denver, Colorado]. I thought, "Please don't let it be on Rocky Mountain Arsenal." I got to the Pentagon the next morning and found out that, no, it was not on the arsenal. The runway ran up into the arsenal, but it hadn't crashed there. It was at a different location. I decided, at that time, that we were going to drain Basin F, because we just couldn't have it as a hazard any more. If the plane had gone down at Basin F, there would have been a congressional investigation like you wouldn't believe. It would have been tragic.

So I called the vice president of Shell and got the key Army staff members in. I said, "We've got to drain that place if we can do it." I called the vice president, and he said, "I think we can." That surprised me. I thought he would fight and want not to do it. But he said, "I think we can do it," so they put considerable effort into figuring out a way to drain it.

By that time, using natural evaporation, and they called it enhanced evaporation, the cleanup personnel at the Arsenal reduced the amount in the basin down to about 50 million gallons out of the 250 million gallon capacity. Shell built carbonized steel tanks, huge tanks that they would put the 50 million gallons in, and at that, the fluid was going to eat through a tenth of an inch a year of this thick steel. The second decision, after we had decided to drain it, was we had to figure out how to destroy it, which we did with an incineration process, and we were able to do that.

It was successfully drained, and that threat went away. A few years later, they were able to get the incineration technology installed that would destroy it. Then the residue was taken away to a certified landfill, the residue from the incineration. It was a terrible problem, but it was resolved. Actually, at one time when it was up near the 250 million gallon level, they were going to go out on a boat so they could measure the depth. In doing so, they had to calculate the life of the boat, because it would eat up a metal boat. It was just one story after another that you had to listen to, the horror stories of Basin F.

But anyway, it was settled and the agreed-upon remedy was valued at about \$2 billion, so we were fairly close. It took eight town meetings with the local people to get agreement on the remedy. I had to attend with the Lieutenant Governor of Colorado and listen as we explained the way we were going to complete the remedy. It took eight town meetings of listening to them complaining about how bad it was, and you couldn't argue. It was a bad situation. I suppose Rocky Mountain Arsenal was the largest, or has been the largest DOD [Department of Defense] cleanup ever attempted and ever completed. So it is possible that you can do it.

MOORHUS: How had it gotten so bad?

WALKER: Well, it was just the early thinking that the natural conditions would absorb the waste disposal. At that time, people thought that you put it in a lagoon. It's on post, and it's not going to go anywhere, except the lagoon leaked and the contamination did go off post. The liner actually was in such poor condition because it had been eaten up by the fluid in certain places. I suppose there were some — there must have been faults or weak spots in the liner. People just didn't — and it was in industry as well as the military — pay any attention to waste disposal. They had tried a 12,000 foot well. They called it deep well injection, and that was an accepted process. They would put the liquid down in a deep well thinking that that would be one way to get rid of it.

The rumor had it, and a lot of the reports had it, that this lubricated a fault line and caused very serious tremors and minor earthquakes in the area. I had a good friend in the area and I said, "You can't really believe that." He said, "Well, when Army stopped doing it, the tremors stopped," [chuckle]. I said, "Well, okay. Maybe you'll make a believer out of me, but that's hard to imagine." He said, "Well, it hasn't been going on since you stopped." So we capped the well, or actually pumped out the fluid that had been left in

the well and filled it with concrete all the way down so there wouldn't be any further use of it. It was successfully capped and filled.

That was one of the projects we had taken on. We capped the well. We drained Basin F. We did several other cosmetic cleanup attempts, and then we took all the sludge out of Basin F that was left and put it in a permanent landfill. It was just one of many problems that they had out there. They've found chemical bombs since that time, and they've had to go out and destroy them.

Response to Love Canal allegations

MOORHUS: You briefly alluded to the Love Canal [New York] situation. Why don't you discuss that, since that was very early in your career?

WALKER: Yes, and that's where I got an award. We had been apprised that Army has some involvement in the Love Canal, that we may have had some illegal dumping at the time and that Army was at fault and should bear some of the responsibilities. We did a complete review of all the records that we had, and we could not find any authorized Army involvement. I said, "If we were responsible, we will do our part." But I could never find any evidence that the Army had been involved in the Love Canal waste disposal problem. It got down to a point where we had to just say the Army's position — that's when I had to go to the Hill — was that we will just have to work this out in court, because I can't find any evidence to support the allegation that Army's involved.

Local authorities made allegations that people were seen out there in uniform, and they also saw Army trucks. This was one of the things. We could never find any of our records that supported that. There were a lot of surplus Army trucks being sold right after World War II, and a lot of the soldiers were still wearing their fatigues. I can remember all my uncles still wearing their fatigues for a few years after World War II. Many of the trucks around the local areas, even in Idaho and Oregon, were old Army surplus trucks that had been sold.

So I said, "That's that, but I cannot find any reason." They never did bring a lawsuit against us. It wasn't strong enough on their part to attempt a lawsuit, and so, for that, I got my first Army award from the Secretary.

MOORHUS: I'm interested when you say you could never find it. Do you use the staff in your office to do the research?

WALKER: Yes. Well, not only that, USATHAMA had several staff members assigned to it. They were probably supported by the Corps district, I want to say Buffalo. I can't remember the district — anyway, whatever Corps district is in the Buffalo area [Buffalo District]. That's where all of the records of the Army had been maintained. I can't remember the name of the plant in that area, but it was a large-scale review by many people in the Army. Many times, the lawyers were reviewing what they had brought in before it even came to me. So when I say personally, it was material reviewed by somebody else. The Army could not find any reason for the involvement. I just supported their decision.

I guess the Olin situation gave us a success that provided confidence for me to go after Shell Oil Company. Going after a big, major oil company on a lawsuit of \$2 billion takes confidence, and Mr. Marsh had it in this situation. But it was gained after we had been successful with the Olin situation that we had gained a little bit of confidence, in that we knew what we were doing. Our experience in Love Canal had helped. I believed that we had a fair program. When we were responsible for a problem, we would step in and do what we needed to do to correct the situation.

Congressional support and public image

WALKER [cont'd]: I was supported by many congressional members on the actions that Army took. A lot of times, if it happened in their district, I would personally go up and tell them it was really serious, rather than let somebody from Congressional Liaison [Office] go in. Congressman [Richard] Ray from Georgia was just very supportive of the program. I have a copy of a page from the *Congressional Record* where Congresswoman [Pat] Schroeder (Colorado) is quoted as having called me a saint.

It was kind of a strange deal, but we worked very closely with all parties to correct a bad situation, so we developed a reputation that we would deal with problems. At times, you knew you had to work with many different people like Congresswoman Smith out in Nebraska and Congressman Bruce Vento at the Twin Cities Army Ammunition Plant near Minneapolis-St. Paul. This was another one of our serious problem areas. He's since passed away.

At that plant, we had a public affairs nightmare, because they really did not trust the Army. Someone had used an example, in the time before I got there, that, "Well, your little kids can go out there and eat so much dirt,

and they still will not be hurt by it,” and they had a cartoon in the newspapers in the area of generals feeding little kids dirt.

MOORHUS: Oh, my.

WALKER: So I went to the plant and looked at the situation. We visited the grounds and toured all through the plant. Then we came up with a plan of what we needed to do at the eight or nine sites which were causing all the problems. Here again, we started buying bottled water, and agreed to put in a water treatment plant. That’s where the Corps came in, because they knew about municipal water systems, as they had done a lot of work installing the water treatment systems funded by EPA grants.

We came up with an overall plan, and then I had decided that, rather than have the media report on us, we would invite the local mayors, congressional members, and state government representatives to tour each site. We put signs up at each site explaining the problem, steps to remediate and the timeframe required to resolve each place. We made very large signs so we could see them easily from the buses. We had about three busloads of people. Congressman Vento and I went on each bus when it came their turn, and by about halfway through the second bus tour, he started serving as the tour director. He was telling them about all that we were doing at each site. By the third bus, he was the total tour director.

With them seeing what the problem was and what we were doing about it, it was very hard for the reporters to really rip into the Army. I’d learned a little bit of how to handle such a problem when I had worked on a similar situation at Woodbridge [Virginia]. We’d had about 80 transformers filled with PCBs [Polychlorinated Biphenyls] in a landfill buried right on the edge of Woodbridge. We visited the site with the local congressman, and we toured around the site. We explained, “This is the site. This is what we’re doing about it,” and he conducted his media event at the site. So from that little lesson learned, we did the same thing up at Twin Cities Army Ammunition Plant.

We had taken care of the number one problem at Rocky and the number two problem out at the Twin Cities. Let’s see, the one that would take much of my time was the cleanup of Hamilton Air Force Base near San Francisco, up on the edge of the Bay. That took an awful lot of time. I was having to go out there every month for over two years. Those were the key ones. The Cornhusker Plant, I mentioned earlier. A lot of times, if it was

serious enough that I had to go testify on the Hill, I always went out to the site and looked at it myself. You don't have any credibility with anyone if they ask, "Have you been there?" and you say no. It's just not the correct thing to do. It's not my style.

That helped the situation, always trying to see it first hand. If it was really a serious problem, you went out and looked at it yourself, because all the briefing charts that you have will never bring out the personality of a particular problem. You see it first hand, and you have the local people on site tell you about it. By the time it's translated and retranslated, by the time it gets to you, it is never quite accurate.

MOORHUS: You said that you got a cash award because of your intervention over Love Canal. Was there a particular situation or problem that you resolved that led to your first meritorious award as an SES in '86?

WALKER: In '86, it was the combination of many things when they wrote up the citation. I think the main thing that helped in that is the progress we made with the environmental program, our success in dealing with Shell Oil Company and the success with Olin Corporation. But just the overall advancements we had made with the environmental program, going virtually from the \$250 million that had been tied up was mostly going for water treatment plants. Then the expansion came to other areas of dealing with air quality issues, water quality issues, and the contamination issues in a fashion where I hadn't quite formulated a sound program plan. It wasn't until the late '80s that I finally introduced the first Army Environmental Strategy. But, everything was leading up to that, of trying to address all the problems facing the environmental program. Through the leadership conferences, I was trying to demonstrate that the Army had a fairly good program going.

4 Origins of the Army Environmental Strategy

Pollution problems in Germany

WALKER [cont'd]: Also, by '84, I was going to Europe and meeting with NATO [North Atlantic Treaty Organization] and USAREUR [U.S. Army, Europe] to address the environmental concerns in Europe and working with what we called then "Environmental Awareness in the NATO Armed Forces." We even made a video, I think, by 1986 or '87. We came up with a pamphlet that would be given out to the units and was mainly just to try to influence the individual service person, Army, Navy, Air Force, because it was multi-service. It showed what could be done about protecting the environment. The 20-minute video gave examples of problems that military could cause in killing animals, polluting streams, damaging historic buildings, etc.

MOORHUS: Why don't you talk now about the situation in Europe, particularly in Germany. They'd had very strict environmental laws and a number of very serious concerns.

WALKER: Yes, that was one of the things we needed to work with NATO to try to address environmental concerns, but we also worked with USAREUR to get money to them to address the problems. In Germany, it was two issues in the environment. One was noise pollution, and the other was water pollution. They are very sensitive about letting anything get into their ground water, because it is an important drinking water source (over 50 percent). The worst thing we could do is have motor pools that were allowing oil to somehow leak into a watershed, into the ground water, or to a water stream.

The ground water contamination near Mannheim [Germany] was a problem, and there were two or three other areas that we had to do remediation. We usually worked very closely with the local administrators and the local commander there to resolve problems. It was to maintain his or her relationships that they had to have with the local people. They were the forerunners of trying to meet really strict environmental standards.

It was something we were not used to. We didn't want to do it, because we thought we were over there protecting them, and why should they be so concerned? But working with German people and trying to increase the awareness and the sensitivity in a country that was very concerned about their environment and their natural resources helped our relationship. In fact, they gave me a little picture that I carried for many years. It was a very young lady, a little girl, saying, "I want a clean environment in the future." You translated the words, and that was the message. Plus, the Green Party brought a lot of pressure on their political system to take interest in environmental protection.

We worked on all of those aspects. We got them the resources, strengthened the environmental specialists they had while expanding the number of environmental specialists they had at Heidelberg [Germany] in the USAREUR headquarters. I went over there early on, and they'd had some success. Army had hired a number two person from a region in EPA and made him the environmental coordinator for the community, but he had been a very senior person in EPA in that region. His health did not cooperate, and he had to leave after two years.

I think it must have been about '88. I asked EPA if they would assign a person to go to USAREUR. I offered, if they would pay the salary, I would pay transportation and the housing allowance. For several years, EPA provided such a person. In fact, the one person that they sent over became so good and so helpful that, when the Army environmental coordinator would go on leave, the EPA person would be named acting in his place. For the life of me, I can't remember his name. Dick Sanderson was the one in EPA that helped me with that program, and they were quite pleased with that effort. Army was as well.

It must have been about that time when I decided that some of the young military officers or some of the young Army civilians should be assigned to a regional office of EPA for a year for professional development. One military person went to EPA headquarters, and they actually wanted him to extend for a time. I can't remember what they called that. It's Army educational and professional development program in the military. Usually it was a captain. There must have been two or three other regions that asked, after they had a person for a year, "Either extend the program, or let this person extend." So we developed a little better understanding between the military and EPA. They usually found out that Army personnel were such

good staff people that they wanted them to stay on. So that helped shape our relationship with EPA.

It was about that time I started thinking about forming the strategy for the environmental program. After a great deal of work, we decided to have four focus areas. We would develop the program around compliance, cleanup, conservation and pollution prevention. We called them the Four Pillars.

The four pillars

MOORHUS: How was this strategy developed? Who all worked on it?

WALKER: We worked on the basic elements during one of the leadership conferences at the U.S. Military Academy. We had it up at West Point [New York] one year. We decided that we needed a strategy. If you have a strategy, then you build an action plan to implement the strategy.

Major General Pete Offringa was the Assistant Chief of Engineers on the Army staff. We decided if we had a good strong strategy, then we would build an action program around the strategy, and we would start developing specialists in those particular categories. With his help and finally with the aid of the Secretary, we formed the strategy, and then we had a launching of the action plan. It was surprising that a lot of the major commands developed the same Four Pillar system and structured their efforts around those four areas.

Many years later, I was over in Poland talking to one of the Polish officers and asking him about his environmental program. I said, "How is it structured?" He said, "We follow the Four Pillar system." The symbol that went out was the Greek temple with four columns coming to the top, and the Four Pillars supporting the program would be Compliance, Cleanup, Conservation and Pollution Prevention. It really helped the cleanup, conservation, and the compliance programs.

I still did not put enough effort, I don't think, into pollution prevention. Even though we said a lot about it, the funding effort going into pollution prevention in the Army was much smaller in comparison. I like to make the comparison: for cleanup, you had about \$400 million on the Army's active sites for contamination cleanup. Then you had \$250 million on the Defense formerly-used sites, so that's about a \$650 million program. Then you had another \$400 million going into compliance efforts. I would say

about \$80 to \$90 million going for natural resources and then a very low amount that we could capture and keep track of going into pollution prevention. It was something less than \$100 million, I think.

A lot of people said, “All this pollution prevention will always pay for itself very quickly,” and yet we put an enormous amount into compliance and an enormous amount into cleanup. It was just enough to get the strategy structured around the four pillars. Now, I guess Army has a new strategy that has just been developed and is working. It is more of a sustainment with equal emphasis on the pollution prevention. It’s on the basis of sustainment, and the program is probably matured enough and that is what is needed today. You fold sustainability into the Army program, with focus on sustaining military ranges and sustaining military installations whether they’re industrial or troop. The objective is to make sure that they stay in existence to provide the support to training and readiness for the Army and the national defense mission.

One example is that, if you don’t take care of the military lands, and you don’t have a sustained approach, particularly on ranges, the ranges will be closed down. Massachusetts Military Reservation [MMR] is a good example. No live firing can take place on that military range. If you want sustained use, you have to work with the regulators and come out with a plan that allows you to [have] sound productive training and still protects environmental quality.

A good example of sustainment was at two training ranges in Germany, Hohenfels and Grafenwoehr, two dust bowls. The Army tank crews would have to wear their gas masks to be able to breathe in the dust. It was just horrible conditions. We established the Integrated Training Area Management [ITAM] Program, developed at CERL [Construction Engineering Research Laboratory], over there with rotations and reseedings. It’s returned to a condition that was more like what you’d really be fighting on if you were going over across a battlefield that hadn’t been ripped up. After the restoration was completed, the area was grass covered, and the dust problems were practically eliminated.

The armored companies going out there said, “Oh, this is so much better. We used to have to wear our gas masks, because the dust was so bad. We couldn’t breathe. This is realistic training when we’re rolling across grassy areas and what not, and we’re not having to fight dust. You do get into dusty situations, and you need to know how to handle them, but it’s not

the typical situation.” So we were actually able to make improvements. The German government appreciated it, because we cut down on erosion. The grass cover cut down on soil erosion. They were quite pleased that they didn’t have so much sediment in the runoff. That was started, I think, some time in the mid ‘80s, the ITAM Program.

MOORHUS: You were talking about the strategy and the Four Pillars. I first saw a brochure in the early ‘90s, maybe ‘92 or ‘93.

WALKER: It came out in late 1992.

MOORHUS: When you first arrived, there was a colonel that was responsible for the Army.

WALKER: Yes.

MOORHUS: But the person that I met and talked with was [Brigadier] General Gerald Brown, Jed Brown who, as I understand it, was the first and perhaps the only general that the Army assigned to that position.

WALKER: Yes.

Soldier and civilian leaders

Military leaders

MOORHUS: Could you talk about the progression of colonels and then the significance of having a general officer?

WALKER: Yes. Just the size of the program, in terms of the dollars and the number of people working in the field, warrants a general officer having responsibility for the program. It was very difficult to get the Army to give up a general officer’s slot to manage the environmental program. This was a situation where, with so much pressure on the program, a new strategy and an action plan — we needed a stronger individual on the Army staff. Actually, the Army made the decision to make it a general officer position, because the Chief of Staff, Mr. Marsh, and everyone supported it. By that time, Mr. [Michael] Stone was about to become the Secretary.

They still were very jealous about giving up a general officer slot for that position, and we were able to do it while General Brown was interested in the position. His replacement was supposed to be a colonel promotable.

They said he's going to be promoted in a short time. Unfortunately, he didn't make the list, the one-star list.

MOORHUS: Oh.

WALKER: By that time, I was considering retirement and didn't continue to push.

MOORHUS: Was that Colonel [Michael] Fellows?

WALKER: No, he was before Colonel Fellows, and he transferred from Hawaii.

MOORHUS: Okay.

WALKER: I can't remember. Now, they've had this series of colonel after colonel after colonel. I think each have had a very short timeframe of service before they transfer or retire.

MOORHUS: General Brown was an Engineer officer.

WALKER: Yes.

MOORHUS: What about the other colonels that had worked in those positions?

WALKER: Most of them were Engineer officers. In fact, all the time I had it, they were all Engineer officers. They were all from the Engineering program. I can't remember who it was, but I think it was General Dominy, who was the director of the Army staff and an Engineer officer, said "I'll find you a general officer," but the Army just couldn't bring themselves to put a general officer over the program again.

MOORHUS: This would have been in the early '90s when the Army was drawing down after the collapse of the Warsaw Pact.

WALKER: Yes, right. I don't know if they just didn't want to or if it was from a leadership change. General [John] Wickham and General [Gordon] Sullivan were very strong on the environment, and particularly General Sullivan. I'll tell a story about General Sullivan in just a bit.

General [Dennis] Reimer succeeded General Sullivan, and he unfunded the IT[A]M program. He also wrote a little article that went into the *Wall Street Journal* that said the Army was spending too much money on the environment. We had some discussions about that, but the Secretary didn't want to make an issue about it. He [General Reimer] should have been reprimanded for sending the article, because he was trying to make policy, and that wasn't his call. The leadership let it go, and we went through an adjustment period to a different view of the environment value.

Management challenges

WALKER [cont'd]: Mr. Strong was not quite as interested in the environment as Mr. Marsh, even though he'd do what you wanted most of the time. But, from time to time he would show support to it. But, then we came into the era of the next administration under President Clinton. We just never were able to hold our own with regard to the environmental considerations in the Army. The program never continued to grow the way it had during the '80s. They even went so far as, during the Clinton Administration, to devolve the DERA Account, the Defense Environmental Restoration Account, back to the Army.

Now, I would point out that there's one thing that we missed in this when we were developing the Defense Environmental Restoration program. We went along for a few years, up until about 1986, and were finding that there wasn't a good funding source for the former defense sites. They were non-DOD property that had been owned or leased mostly during World War II. The situation was we did not have a way to fund these formerly used sites. During emergencies, I had to take money from the Defense Environmental Restoration Account, and people questioned whether we had the authority to do that.

I had a situation in West Virginia Ordnance Works, now called the Clifton F. McClintic Wildlife Management Area. After World War II, it had been turned into a wildlife refuge. We were using Army funds to correct the situation, which was a formerly-used site, and actually, it wasn't even property of the Army. It was at that time that we went and met with a member of Senator Stevens' staff saying that we needed some sort of an adjustment or a change to DERA to allow this. It was at that time we got the basic legislation for the FUDS, the Formerly Used Defense Sites. DOD had a special fund, and the Army would operate that fund for all the services.

In fact, it did have one aspect that read that, if a service wanted to take responsibility for its former property, that was their option, but many elect not to. Once it's left their jurisdiction, they would not come back in. The Army managed FUDS after it was established. We had places like the West Virginia, the Nebraska Ordnance Works [Meade, Nebraska], and the Eau Claire Ordnance Plant, Wisconsin, now National Presto Industries, NPI. We had the chemical storage site on Water Island in the Virgin Islands.

We have about 36 or 37 sites throughout the U.S. where chemical munitions had been disposed. We had the Raritan Arsenal [Edison, New Jersey], which was an old abandoned arsenal up in New Jersey. It is the headquarters office of the EPA Region II. We formulated the program, and it helped get that effort under way in resolving DOD's responsibilities at sites that had been formerly used by DOD. That kind of firmed up the basis for all of the restoration program that we had. Now, we go back to this management problem.

It was a battle all the time to get good colonels to manage the program. Finally, they got General Brown, and he was outstanding. I just thought life would go on great forever, and then he retired and left. So, it was an effort to try to keep good military officers to manage the whole program. I often go back and forth as I think about my career and wondering on the Army staff, if the Army environmental program shouldn't have been managed by a civilian, a senior careerist such as Al Carton, who could have handled it very well. Maybe have some military on the staff, but I'm not so sure it needed military on the staff, since it is not a core mission of the Army.

I don't know how that would have turned out. In the early days, you needed a colonel, perhaps, to have better communication with the rest of the Army staff, but it's purely a civilian-type program. In the cleanup, it certainly could be handled by a civilian, because there are not any military specialties that you need. You have to have experts, and they could be civilians with knowledge of Army-unique chemicals.

I wonder, since there is a strong demand to maintain your core competencies in the Army, if it is wise to keep military officers tied up in the environmental program. Certainly, when it involves an interface between training, maneuvers, and the aspects of that, you do need liaison and need someone who speaks the military language. But it isn't anything to say that a very highly qualified civilian couldn't run them. You had so many problems to deal with, and that was one of them. But in the back of my mind, I

always thought about the fact that the environmental program could have been handled by a civilian.

Civilian leaders

MOORHUS: One of the other organizational changes that took place in, I think, '91 — Susan Livingstone was appointed the first Assistant Secretary of the Army for Installations, Logistics, and the Environment.

WALKER: Right.

MOORHUS: That was the first time that particular combination was put together. Is that correct?

WALKER: Yes, that's right. That's right.

MOORHUS: Did that change anything about what you were doing?

WALKER: Yes. One thing is that it highlighted the Army's interest in the environment, particularly on the staff. You could see that there was an assistant secretary over environment rather than just in my title, and that gives a certain stature and a certain visibility. It was soon after that that some of the other services started getting environment in their assistant secretary's title. The Navy — it took them considerable time to get a counterpart that was equivalent to me. When I first arrived in Army, I worked with one that was a senior environmentalist at the GS-13 level, and I worked with another person who was a senior safety and occupational health person. Then they finally got a Deputy Assistant Secretary of the Navy for Environment and Safety. It included occupational health, but they didn't include it in the title. This was a similar situation for the Air Force, to make sure that they had environment recognized.

MOORHUS: What was Susan Livingstone's background in the environment?

WALKER: She came from Veterans Affairs. I think it was more, though, in the occupational health and safety responsibilities. Prior to that, I think from her Hill experience and legislative background, she knew quite a lot about environmental issues. She was very supportive of the program. I always marveled at how very active she was with our program. She was one of the key people who helped us finalize the strategy.

It was during her time that we got the strategy finally signed. We'd been working on it, forming it and actually implementing some of the recommendations. We tried to reform the offices before that by organizing them around the pillars. It wasn't until she worked with us that we finally got the strategy finalized and signed by the Secretary. It took quite an effort to get the Chief of Staff and the Secretary to sign it. We had one subtlety in there that General Sullivan just had to have changed. That was the fact that we wanted the Army to be the leader in environmental prominence or something like that, and he changed the "the" to an "a." "A" leader was enough for him. He didn't want to have to take on all that. So to get the strategy signed off on by a significant stakeholder, I didn't fight over an "a," but it was one of those compromises you have to make.

MOORHUS: In some of the reading I did, Susan Livingstone did not agree with [Lieutenant] General [Henry] Hatch about how the Corps of Engineers should be working in the environment and also how the Army should be managing the environmental program.

WALKER: Right. There was one split or break in the views on program directions. General Hatch saw the Army's program as a large asset. Actually, at that time, I was wanting the Corps of Engineers to get more involved with the program, because it was just getting too large for USATHAMA. It was trying to conduct the large cleanup program, and they were having a struggle. USATHAMA needed the organizational structure, the district structure, and everything the Corps of Engineers had to offer.

So we changed USATHAMA to the Army Environmental Center and transferred it to the Engineers. The notion was, and I didn't understand the agreement, that the primary responsibility of the Army Environmental Center is always the Army installations, and that's what it's supposed to serve. Other work like the Corps does is called the Work for Others program. They do cleanup for EPA, and they do cleanup for the Air Force. So this worked for the other programs in the environmental arena.

General Hatch decided that he wanted to do work in the radioactive area, working for Hanford [Engineer Works, Hanford, Washington] particularly, because the Speaker of the U.S. House of Representatives was Mr. [Thomas] Foley from that area. General Hatch convinced him that the Corps could take on the cleanup efforts of the Department of Energy and do them very well, and I didn't disagree with the last phrase.

He started pulling the technical resources we had out of the Army Environmental Center and sending them out to work on the Hanford cleanup program, and Mrs. Livingstone didn't see it that way. She was in charge of Army installations, and the Army environmental policy came through her office. She didn't want to take on the large problems of the Department of Energy. I don't know whether she recalls it that way, but that was the basis of the split between the way that she wanted to run the environmental program and General Hatch. He was a very determined person. I mean he has a very strong personality, and he also thought he was lined up very closely with the Speaker of the House.

Mrs. Livingstone took her case to the Chief of Staff of the Army. With her effort, it caused such a serious problem that the Chief of Staff, General Sullivan, met with General Hatch to discuss the disagreement. General Sullivan supported Mrs. Livingstone, because he thought not only was the environmental program an issue, but he was concerned that the construction costs the COE was charging the Army were much more than if they had the Navy doing the work for them. So he told General Hatch, "I think I'm going to get the Navy in here to do my construction for me."

But there was just a combination of things. Eventually, General Hatch, if he had played the politics a little better in the building, would have been able to accomplish some of what he wanted, but he kind of let it get away from him. But that was a breach, and it all stemmed mostly from one thing, and that's when Mrs. Livingstone decided the Army Environmental Center should start reporting directly to the Army staff and not through the Corps of Engineers. Oh, there was a big debate. General Offringa was right in the middle of it, and he was trying to help, of course, but he was rated by General Hatch. He tried to rework the reorganization plan. Mrs. Livingstone wouldn't approve the organization plan until the Army Environmental Center reported to the Pentagon rather than through the Corps of Engineers Directorate of Military Programs.

After that, I was able to get most of the cleanup program, though, over into the Corps — the FUDS first, and then the execution of the cleanup activities. Finally, I was able to get the Corps involved in studies leading up the cleanup as well. The reason was that USATHAMA, and later the Army Environmental Center (after we changed the name), still could not handle the structural problems of managing a large-scale cleanup program. You needed a central body to handle the total national and international program.

USATHAMA would, with its system of management, send a person out to say California to work a problem for a short time and then return to the headquarters at Edgewood, Maryland. They didn't have that structure, a district office, to support field activities. They had to develop a continuous working relationship with the regulators all the time, and they're part of the community. These USATHAMA directors would go out there once in a while, get something going, and then they'd come back. The work effort would stall out, and the contract wouldn't stay on track the way it should.

So that's when we decided that the resident district should handle the problem. The resident districts were supported by the other technical offices like Huntsville [U.S. Army Engineering and Support Center, Huntsville, Alabama] and other COE engineering centers. But we could never really have achieved what we did in the cleanup program at the rates that we did if we had left the program with the Army Environmental Center. I had to get most of the cleanup effort to the Corps.

Now, the COE headquarters plans the work allocation, the money allocation, establishes the list of project priorities that has to be accomplished, and then sets the budget according to that. That list of priorities goes out to the different projects, whether it's an active installation or whether it's the FUDS program.

It first started out where the Army Environmental Center/USATHAMA would do the studies. You had to go through a site assessment and then a site investigation with the cleanup alternatives. Then you had the Record of Decision and conducted the remedial action. We were finding so much of the time that, after the Corps had taken over the remedial action, they had to redo or conduct several additional studies before they had the confidence to undertake the cleanup at a particular project.

You never find a cleanup project site that has the same problems. They're all different. The soil character, the average temperature, the ground water regime are all different. So the body of knowledge that you need to have to really feel comfortable about your decision requires more background or characterization studies. By the Corps going in and doing the assessment, doing the RI/FS, remedial investigation/feasibility study, then you go to your Record of Decision and remedial action. By the time you go through all these steps, then you had the body of knowledge and experience to deal with the cleanup better. It was costing more money until we changed the management. The Army Environmental Center (AEC) is the repository for

the studies and records. AEC maintains the history about each project and also prepares the restoration report that goes to Congress each year.

The Army Environmental Policy Institute

MOORHUS: Tell me about the Army Environmental Policy Institute.

WALKER: Yes. It was one of the things that came out of one of the leadership conferences. I can't remember which one, but at one we concluded that we should have an Army Environmental Policy Institute. It was my view that the policy institute should take on and look at legislative trends or political trends going on and make a prediction about the way that we should be directing our programs. It was not to be involved with the day-to-day activities and the near-term policy decisions, but to take on a long-term view of the Army's program direction.

In doing that, you have to look at the interest groups' movements, the legislative background of the environmental problems and programs, make some calculations or predictions about the direction everyone should be moving in. Army would then shape new policies for the Army so we're more in a proactive situation than we are always reacting and behind a problem. So we got that established.

I also wanted it away from Washington and located with an academic community that could harness the academic resources and come back with fairly well-thought-out recommendations to guide the program. I think we got everything structured right, and we had a survey of several academic institutions: Penn State [University Park], the University of Florida [Gainesville], Virginia Tech [Blacksburg], Georgia Tech [Atlanta], and University of North Carolina [Chapel Hill]. We had an evaluation and came up with Georgia Tech.

MOORHUS: But it was first located at Champaign, Illinois.

WALKER: Yes, for a time it was there, with the understanding it was going to move.

MOORHUS: I see.

WALKER: The first director we had was out of the CERL. They had done a lot of the basic thinking about the Institute out there, but it was always understood that we were going to move to another location. We did look at

the University of Illinois, as well as about 25 others, and reduced the list to five. But we thought that CERL does a lot of good, hard, basic research work for the Army, and we wanted policies that would take into consideration technological advancements and where we're going. I wanted the Institute to be over and take a look at just more of a political futuration of trends the way we were going with our national priorities.

Considering everything, it looked like Atlanta would be the best location, plus they could team with a historical Black college, and that was Clark Atlanta [University], which was right next to Morehouse College, Atlanta. We had held one of our Environmental Leadership Conferences at Clark Atlanta.

MOORHUS: Why was that important?

WALKER: Well, it was a consideration. We were going through the period of needing to address environmental justice. A lot of the landfills were being located near Black communities, and other environmental impacts were not being considered. Federal programs were getting a lot of criticism over that issue. Congressman [Ronald] Dellums was the Chairman of the House Armed Services Committee and didn't think maybe some of those areas were getting a very sound shake.

MOORHUS: Was this when Togo West was Secretary of the Army?

WALKER: It was before.

MOORHUS: Oh.

WALKER: It was before. Congressman Dellums was a Black congressman out of California, and he was over the House Armed Services Committee; he was the chairman then. He had traveled with us out to Rocky Mountain Arsenal once, because he wanted to visit that site. Congresswoman Schroeder wanted him to as well, so we took him to the Arsenal for a tour and a briefing. It was one of those situations that we just needed some association or input from a minority institute or a historically Black college.

It seemed like Georgia Tech had a better working relationship with Clark Atlanta than they did with some of the other universities. It was close. It was fairly close. Penn State was very close. When we did a ranking system,

Penn State came out very closely, and it was a hard call. I don't know if you saw that Sean O'Keefe is resigning from NASA.

MOORHUS: Yes.

WALKER: We went up to Penn State, and I always tried to figure out, when I went to meet with a candidate university, who they would bring in that would know me. So who walks up to the table while we're sitting there and puts his hand on my shoulder — I look around, and it's Sean O'Keefe out of Senator Stevens' office. Later on, then, he was the Secretary of the Navy, and after his Navy time, he went up to Penn State. I can't remember what it was. But talk about a hard sell — it was very close to going to Penn State, but we finally located it at Georgia Tech. Mr. [John] Shannon, who was the Undersecretary at the time, wanted us to do due diligence and careful consideration as we marched through this effort. Establishing the Institute was quite an effort, but I think it was formed for the right reasons. I have always had high hopes for it.

We got started doing a few things. We started doing some analyses of legislative trends, but by the time we really got it up and going, I was starting to have serious health problems. In 1990, I'd had my first heart attack, and then in 1994, I had a really serious heart attack. So I was starting to think about retiring. One factor in my decision on my retirement was that I just couldn't keep up the effort the way I thought I should have been. Had I taken care of myself, like I am now, I would have still probably stayed on a few years. After the last attack I could not keep some of the things going that I had wanted. But I had to make a change.

MOORHUS: Where does the Army Environmental Policy Institute report, and how are they funded?

WALKER: They were congressionally funded separately most of the time. In the years I had it, it was separately appropriated, and it came through the Operation and Maintenance Account, the OMA Account. It varied all the way from \$3.5 million, maybe, to \$5 million. I think we averaged probably three and a half. I think one year, we may have had it to \$5 million. When it was first getting started I think that was the situation.

It reported directly to me, and it still reports directly to the Army Secretariat, and that was the notion. The Institute could consider the viewpoint and comments of the others and conduct a good, thorough review of any

recommendation. Also, they could have options for a policy change. I wanted to see some options, beneficial options. There are several things that you can do, but you're looking at what's going to fit into the Army and be the best for the Army in the future.

Sometimes, staff analyses taint it just a bit, because they want to keep the traditional approach. Sometimes that's good. Sometimes it's bad. Sometimes you have to make adjustments, but I wanted to be able to advise the Assistant Secretary in a fashion that I thought would be very well thought out with the academic community behind the recommendations. Also, I wanted Army to review what we proposed. I don't know. That approach has its ups and downs.

You have to be very careful on policy institutions. I believe you have to keep them small and effective in bringing you the types of options and alternatives that you need to provide direction for a program. I guess my work at the Water Resources Council and work on national priorities, particularly for the water program, have given me a view of the way to deal with forming a body of program policies.

Some people don't have the notion of how you use an institute and it shouldn't be used to help you to do your day-to-day operations. Maybe some think it should, but that's not what it's there for. It's to do other things. Maybe when it is not solving day to day, they believe that it doesn't meet its effectiveness. I disagree. I haven't heard much about the Environmental Policy Institute recently, so I don't know what's going on.

MOORHUS: Maybe this would be a good place to stop for today. What do you think?

WALKER: That sounds good.

5 Challenges in the Field

Danger at the Boy Scout Jamboree

MOORHUS: Would you like to start today with some things that you've identified you wanted to add to what we talked about last time?

WALKER: Yes, one of the things that I mentioned after we ended the last session was the situation with the Boy Scout Jamboree at Fort A.P. Hill [Virginia]. At the very end — in fact, it was the day of the reelection of President Reagan — we had been informed that, in the middle of the Boy Scout Jamboree where they held their encampments, they discovered dioxin, which is a very strong and toxic chemical. That was a total shock. We had the Army Medical Corps go down and assess the area, but it came to the point where we had to announce that, yes, that was discovered in the very same place that the Boy Scouts had camped, some nearly 28,000.

We checked with Public Affairs. We checked with the Army leadership, and we decided, on the day of the election, that we had to announce that dioxin had been discovered. Immediately, we started working with the Boy Scouts, working with the Virginia State EPA and the Federal EPA. In fact, I convened a meeting in the Pentagon with representatives from the Federal EPA, the state EPA, our environmental and health people, and the Boy Scouts and decided on an approach to making the announcement. We set up a crisis center in the Pentagon. We had it manned by either nurses or medical doctors. Within one day, I had eight AT&T [American Telephone and Telegraph] 1-800 numbers into the Pentagon, which was a marvel. It was actually a miracle to have that happen in such short time, because one of the Boy Scout leaders knew the vice president of AT&T. The vice president had either a grandson or son involved in the Boy Scouts, and we were able to get our 800 numbers immediately.

We answered some 900 calls from concerned parents. We answered about 2,400 letters that came in, as we had announced where to write if you were concerned. For any child who had attended the Jamboree and who had gotten ill, the parents were concerned that it was associated with the dioxin exposure at A.P. Hill, and rightly so. The counseling went on with any doctor of the children or with the parents between the Army nurses and doctors. As well as handling the crisis of responding to concerned parents,

we also formed a task force that went to A.P. Hill to decide on a cleanup remedy of the dioxin spill. We identified all the contaminated soil.

It was where, at the time, Colonel [Gerald] Jed Brown came into the picture, because he was the TRADOC [Training and Doctrine Command] Engineer. TRADOC, at Fort Monroe [Virginia], had responsibility for Fort A.P. Hill. We had emergency funding for the cleanup. All of the soil was removed to a secure land area, and then later on, it was incinerated.

But the success of the whole thing, if you can even call it a success, is that we had a four or five percent increase in the number of the Boy Scouts that attended the next jamboree, which was summer in '85. Everything was going fine until I think we were about two weeks into the jamboree. At 4:00 o'clock in the morning at my home, I received a telephone call from the Boy Scout on-site commander, the senior Boy Scout representative at Fort A.P. Hill. He said, "We have another crisis here. One of the Boy Scouts has just dug up what looks to be like a land mine."

MOORHUS: Oh, my gosh.

WALKER: So my immediate reaction was, "Move everyone back." I think they'd started the evacuation but, "Move everyone back at least the length of a football field. You can visualize that in your mind. Then get the commander or get an MP [military policeman] as quickly as possible. Secure the area, and don't touch the item until the EOD Team, the Emergency Ordnance Disposal Team, gets there."

About an hour later, the commander of the installation called me and said that, well yes, they had found a land mine, but it was painted blue, and it was a training mine. So it was inert and did not have any explosives in it. Well, the young Boy Scout had purchased a metal detector at a garage sale in his neighborhood and had brought it with him. He had heard that there were Civil War artifacts in the area and that he might be able to find some. So immediately, everyone was notified, "Don't dig. Just don't dig. If you do notice anything like a piece of ordnance, notify your scoutmaster."

The notion they called me immediately is because they thought they'd have another public relations nightmare, another crisis of having unsafe conditions with the Boy Scouts again. Anyway, we got it settled down, and the Boy Scout Jamboree went on. I think I've attended at least three since that time. The last one they had, one of my nephews was there, so we went

down to visit him while he was there. I watch very carefully what's gone on at the Boy Scout Jamborees.

Bombs in Oklahoma

Then there's another thing I wanted to bring up. I think it was that summer, almost about the time of the Boy Scout Jamboree, but it was an incident that happened in Checotah. The Corps was involved. Checotah, Oklahoma, was the site of a large accident, where a truck that the Army had contracted to haul Air Force munitions or large bombs had caught on fire about 3:00 o'clock in the morning. The bombs started exploding, and it demolished a big portion of the interstate. I can't remember the number of the interstate, but it's south of Tulsa, Oklahoma. It damaged the roof of a school, or blew the roof of the school off, damaged some nearby hotels, and caused some sort of crack in the main street of the little town of Checotah.

During the time just before the bombs did go off, the town was alerted. They sent their fire truck with their firefighters out to extinguish the fire in the truck. The driver of the truck had stopped them, got them off the truck, and got them over to the side of the road, and then the bombs started exploding. Three bombs detonated and blew up the truck. Then the other eight or nine bombs cooked off. They had what they call a low-order detonation. But anyway, it destroyed the town's fire truck. It did destroy part of the interstate and did some damage to the nearby village of Checotah.

I was called immediately to the Hill, because it was a crisis. The situation was that the mayor had called the congressman, so I had to go up there and tell them what we were doing about the problem. The Corps went in immediately, assessed the damage, and prepared an assessment report. That was important, because about a month later, a tornado went through the town. So they had had two difficult situations. I should have remembered the name of the congressman, but he kept saying that the Army was liable for the damage.

The truck fire had been the result of two elderly women driving along (one elderly woman driving with another woman as passenger), and they ran into the side of the truck as they came up the ramp onto the interstate. They rammed into the truck, and the truck dragged the car for about 200 yards or something like that. Of course, when the driver got his truck stopped, everything was on fire. The car had caused a fire. He pulled the two ladies to safety, and the police cited the driver of the car.

In a situation like that, liability was with the person causing the accident. I said, “We’re very concerned about the problem, but our attorneys say we’re not liable.” The congressman said we should look to the insurance company of the contractor owning the truck. I indicated that the truck company was not liable. Of course, they didn’t have nearly enough insurance to cover it. By the time I had returned to the Pentagon, after getting some real concern from the congressman about the Army, the senior senator from the state had called the Secretary of the Army, and they had talked about remedy for the problem. Congress would get emergency legislation, and Army needed to draft that type of legislation which would provide assistance to the town. We went right to work and found some legislation that had handled a similar situation in Texas many years ago. We used that legislation as a basis and were able to get the town \$5 million to correct everything — buy them a new fire truck, repair all the damage to the street and buildings, and repair the interstate highway. The case was settled, except a month later there, a tornado had gone through and caused more damage to the area.

That brought about a situation where my first national television debut occurred. I was interviewed, because the investigative reporters out there did not like the looks of the individual who had been driving the truck. I mean he was not what you would say looking as a model citizen. He just looked like a very rough truck driver, and that was all. I said, “Well, one thing, in a crisis, he knew what to do, because he saved several lives.” This was on *60 Minutes*. I did make the national news reporting about this individual. But the media tried to pin the Army with the fact that he hadn’t been very well trained, but he had been. A lot of my relatives out in the West saw me on TV, and that was quite an exciting thing for them. So that was my first appearance on national TV.

Torpedoes in Denver

WALKER (cont’d): Let’s see, another issue I want to bring up was when I had to serve on the National Transportation Safety Board [NTSB]. I think it had to be two years later, so it must have been ’86 or ’87 that my wife was traveling across country with my daughters. They had gone down a southern route along the southern part of the United States, and then I went out and met them in Idaho. Then they drove back through Wyoming and Nebraska. My wife called me and said, “There’s something really bad happening south of here in Denver. A truckload of torpedoes has rolled over in a main intersection in Denver, and there are cars backed up into Wyoming. It’s a horrible mess down there. Are you involved in it?” I said,

“No, I think that’s a Navy problem.” It sounded like a Navy problem, and I wasn’t involved. But I called our safety people, and they said that it was an Army-contracted truck. About a few minutes later, I got a call from the Secretary of Defense’s office, and they said, “It’s an Army truck. You’d better get ready to go out there.”

The situation was that a truck, coming out of Wyoming, was traveling down the interstate and was going to go east from Denver loaded with torpedoes from the State of Washington. Then I had to appear before the Transportation Safety Board as a witness for the Department of Defense. Fortunately, the action had been taken by our safety people who were rushed to the scene. It was the correct action. No one was hurt or damaged. The people at the accident scene thought they had leaking torpedo fuel on the ground which would be causing a large contaminated area. It did not occur. It was just hydraulic fluid from the truck, but it really caused a big stir.

I know it had inconvenienced a lot of people, because they had been stalled in traffic for, I think, 10 hours or something like that, until the truck was finally moved and the site cleared. Again, I told the Secretary of Defense’s office people, “Look, they’re Navy torpedoes. I don’t know anything about the particular torpedo you’re talking about.” They said, “It’s all right. We will have a number of Navy experts traveling with you as you get to the plane and get out there,” and sure enough, I had about four Navy captains flying with me. They explained all the details about this particular torpedo, Mark IV, and the Otto-2 rocket fuel.

So I got ready to meet with the Transportation Board, because they were wanting to know about the cause. I quickly reviewed the truck driver’s record, how well they had been trained for driving a large truck loaded with torpedoes, and it wasn’t very encouraging. The person was a female driver, and it was her first time on the road, and she had just passed the driving exam. Even though the truck firm itself had a good reputation and very good training program, she had just gotten through.

By the time I arrived in Denver, the trucking firm stepped up and reimbursed the city for all of the expenses that they had incurred in dealing with this accident. This removed the pressure from the city, because that’s what they were after. Congresswoman Schroeder, one of the first speakers at the Board hearing, recognized that we were trying to do what we could, supported us at the hearing, and said that we were making all the adjust-

ments needed to correct the situation. The Board would only let one person for each of the eight tables of experts speak, and I was the speaker that represented the DoD table. That was my first dealing with the National Transportation Safety Board.

The policy changes that came out of the hearing which were most important were that, before you could drive a truck with explosives, you had to have two or more years of experience driving heavy trucks with comparable loads. That was what I thought was a good national policy change. It corrected the situation, so some good came out of it. It was bad that the poor lady turned the truck over on her first trip.

A quick story: She had owned the truck with her brother, and they were driving from the State of Washington, in the Seattle area, to the East. They had started out. He had the first shift, and I guess about 2:00 or 3:00 o'clock in the morning, he had changed and gotten into the bunk in the back of the truck to sleep. He let her take over the driving. The first cloverleaf that she came to, she did not make the turn, and the result was a bad scene. After the accident, she just disappeared. When we had the Board hearing, the brother was there, and all he could do was say, "The truck was turning over, and I was trying to get out of the back." She failed to appear at the hearing. The Board tried to find her during the hearing, but they never did. I don't know whatever happened to her. My testifying before the Board was an interesting assignment, and I will never forget it.

MOORHUS: It's interesting that you identify, quite importantly, the policy issue. That was for, not just military related hazardous cargo, but for all hazardous cargo. Is that right?

WALKER: Yes. I guess that's the background that I always looked for, a sound national policy. I studied programs and policies when I was at the University of Idaho, so that is what I always look for. Your policies have to make something happen. I always feel or believe that a good national policy makes improvements happen at the ground level. That's the example that I used about causing a new national policy that is applied everywhere. We have not had an incident happen like the truck accident in Denver loaded with torpedoes since we changed to the policy where a person has to have had two years' experience on a large five- to ten-ton truck. That was the National Transportation Board's conclusion, and I endorsed it when we were finished.

Chemical and munitions demilitarization

WALKER (cont'd): Another area that I just wanted to dwell on during my career of 16 years at the Pentagon was, occasionally, they would not have a manager for the ChemDemil [Chemical Demilitarization] Program, the Chemical Munitions Destruction Program in the Pentagon, due to turnover or someone retiring. Two or three times, I picked it up, on a temporary situation, to manage it. It's a very large program. I think it started out at about a \$6 billion level of effort as a prediction, and now it's about a \$13 or \$14 billion level of effort that they have expended in destroying the chemical munitions.

I only managed the program temporarily with the understanding that would be the case, because I thought that a better qualified person would be a chemical engineer when you're dealing with a very sensitive munition and one that needs a great deal of oversight with very qualified people. While I would do it on a short-term basis, I would never assume responsibility for a long term. Besides, I had the Environmental, Safety, and Occupational Health Programs, and sometimes, you'd consider that a conflict of interest. I would be more independent checking the safety of the program as well as occupational health program and the environmental aspects, if I did not direct management of the program. I did want to mention that experience.

Based on that experience is why I've been called recently to review a program that the Japanese have developed to destroy their chemical munitions in China. It's oversight, reviewing the environmental considerations as well as the safety concerns, as they go about conducting a very challenging program effort in China.

MOORHUS: Which Assistant Secretary was responsible for the Chemical Demilitarization?

WALKER: Well, it varied. When I first arrived in the early '80s, it came under the Assistant Secretary for Research, Development, and Acquisition, so that would be the Research and Development and Acquisitions side of the Army that had the responsibility. Then it transferred to a Deputy Undersecretary by the name of Amy Hober. She was a very capable individual. When she retired and left, it was transferred to the Assistant Secretary for Installations, Logistics, and Environment [ASA(IL&E)], Mr. Shannon. I managed it off and on during that time.

It has gone back and forth. For a time, it was with Mr. Shannon. Then it went back over to what is now called Assistant Secretary for Acquisition, Logistics, and Technology, ASA(LT). My successor, Mr. Ray Fatz, still provides, and always does no matter where it is -- he provides assistance from an environmental, safety, and occupational health standpoint. So that did not change. It was always that my office provided that technical backstopping.

MOORHUS: Did you have any involvement with the Cooperative Threat Reduction Program?

WALKER: Some, with the treaty implications. We assisted in one aspect very heavily, and that was the destruction of the Pershing II missiles. That was one of the treaty requirements. We wanted to do it at two locations in the United States. One was Pueblo Army Depot [Colorado] and then at the Longhorn Army Depot [Texas]. We worked with both states. Even though it was a treaty requirement, we could waive a lot of the requirements, which we didn't want to do.

The governor of Colorado said that he would support the destruction because of the treaty implications, but he wanted it done safely. The same situation was down in Texas. But we found that, with the majority being in Texas, we destroyed most of them in Texas. For the small stockpile that was in Colorado, we did that as well. But we worked very closely with the two states.

We came up with a technique compared to what the Russians did that was called static firing. It was done at an angle, where the energetic material was projected so it would go up at a 45-degree angle instead of along the ground where it would stir up the dust. There was very strong heavy equipment that attached to the rocket that held it in place. You would actually fire it, which was better. The one alternative, that no one liked, was splitting each rocket with explosives and then burning the contents in the center. We were able to do that, but it had environmental problems. The technique that the Russians had offered was to fire it into space for destruction. I guess "launch to destruct" is what they called it. We disagreed with that. We went with our static firing with them locked in place.

But anyway, that was all over, and then I was invited to be part of the dedication at the Smithsonian. If you go into the Air and Space Museum, you will see the SS-20, and you will see the Pershing II; that was the culmina-

tion of that effort. Just a little thing which you always remember is, when you compare them in size, you can see the little Pershing II missile was very effective at delivering a nuclear warhead, and beside it is the SS-20, a huge structure standing up so much higher than our smaller one.

It's just a matter that we were able to simplify and reduce our rockets in size. For the SS-20, it had large quantities of nitroglycerin, and that is one reason why they had so much difficulty with their destruction process, since it was such a safety concern. So that was an interesting thing that I was involved in, part of the treaty aspects. Unfortunately, some of the U.S. experts made trips to Russia and visiting them to observe the reductions in their chemical stockpile, but I didn't get to attend. But certainly, the U.S. would provide expertise from the safety and the occupational health program when they needed it.

MOORHUS: Good. Would you talk about Spring Valley now?

WALKER: I have been advised by the Office of the Army General Counsel not to make any references to Spring Valley due to the sensitive nature of the project.

MOORHUS: All right. Earlier you talked about traveling. Were there situations where you had to travel on very short notice?

WALKER: Yes.

MOORHUS: Did you travel commercial flights then?

WALKER: Mixed. Sometimes it varied. Within 100 miles or 150 miles, you can go by helicopter very quickly. If it's 400 or 500 miles, you'd get a fixed-wing Army plane out of Fort Belvoir at Davison Army Airfield. Occasionally, you can get assistance from the Air Force to travel a greater distance, and I've gone to Europe on Air Force planes.

I guess this is another situation. We had 240-some Nike missile sites in this country that were abandoned, because of the change that those were no longer needed in the air defense structure. Towson, Maryland, had a Nike missile site, and they used tremendous quantities of refined oil that was something similar to sewing machine oil for their maintenance in the moving parts. They also used cleaning solvents — TCE [Trichloroethylene], a chemical base. Both of those had found their way into the drinking wa-

ter. I immediately went to the site, because the congressman was a very senior congressman in Maryland. He has since passed away.

I flew up by helicopter and landed there. The *Baltimore Sun* reported that “General Walker” visited the site. Two days later, I was major general in the same newspaper. Then a few days later, I was up on a hill with another congresswoman, and a Major Walker had just been there, and she kept calling me Major Walker all the time. I went up and down the chain in rank very quickly. But that was one of the humorous things that happened during my travels and visits to the Hill.

It was interesting at the Towson project. We issued bottled water again immediately. We had a remedy. But, half the local people did not want a permanent water supply line out from a secured source, because they thought they might be annexed on one side by a larger township. Some people on the other side didn’t want any more development moving out where they were. So, after many studies and coming up with different remedies, the recommended solution was to extend a pipeline from one of the other communities.

The disagreement went on for so long that natural attenuation finally reduced the levels to acceptable drinking water standard. The problem went away, and they never had to install the pipeline. But, it was very serious there at the time when the levels were high in the drinking water. It must have been about seven or eight years of debate over the selection of the remedy, and all the time they were receiving bottled water. Now, the problem’s gone away. They’re back on their regular supply.

That introduced the concept, that EPA is now accepting, of natural attenuation as remedy where nature uses its own forces to cleanse a problem. Sometimes the conditions are such that that will occur. Other times, like an unexploded ordnance situation, the threat is always there. In the dioxin situation down at A.P. Hill, it may be many, many years for natural attenuation to take place. We found sunlight can break the dioxin down. But, when it gets into the groundwater and was under subsurface (soil), it doesn’t break down.

Actually, the situation at Fort A.P. Hill occurred where they’d stored insecticides and herbicides. Those had been in a building, and they had leaked. That got into a small drainage, and as it drained down to a larger stream, it

was deposited all along the stream. Later on, at some of Army's other sites, EPA would review natural attenuation carefully as a remedy.

Remediation at former defense sites

MOORHUS: Can you talk now about the FUDS program and some of the special issues concerned with it?

WALKER: Yes. The number of sites, and I can't remember — it's quite widespread throughout the country.

MOORHUS: It's several thousand.

WALKER: Yes, it was 6,000. Through reviews we reduced the number to about 4,000 meaningful sites that really needed careful attention, and I think maybe there must be 400 or 500 that are being actively worked, at some stage, throughout the United States. The program is needed, and it was necessary. It saved a lot of money just putting it under one organization, rather than having each service take care of what was identified. Many times, when it is an old, old site, particularly in munitions, you never know which service people might have gone to for assistance.

Bombs, yes, they can be traced to maybe Air Force, Navy or Marine Corps. But even in the Army, it gets back to whether it was the Army Air Corps that was responsible at the time. It saved a lot of money and held down heavy administration costs if all the four services were trying to do it. So I think it was structured right to have it centrally located in one program.

The FUDS program is difficult, because you're going out and working on somebody else's property most of the time. Sometimes it was considered that we should go and buy the property back, but usually, we would develop a remedy with the local landowners and users and go forward on that basis.

There have been times when the site's been turned over to a university, or it's been turned over to a state. West Virginia Ordnance Works is now a wildlife area. It had been sold for just a few dollars to the state at the end of World War II. The buildings have been demolished, but the TNT burning grounds are still there. Chunks of TNT were large enough that you could actually hold them up and burn them. It hadn't been cleaned at all, but the state knew that they accepted the condition as-is.

Nebraska Ordnance Works had been turned over in segments; part of it was owned by the state and part of it by the University of Nebraska [Lincoln and Omaha]. So Army had to work with the various jurisdictions in charge. Interior has some of the FUDS sites. One in particular out in Illinois we worked with the Park Service to resolve a contamination problem. Then with the Rocky Mountain Arsenal, the remedy was working with the Fish and Wildlife Service, because they wanted it as a wildlife refuge. So it came into their jurisdiction because they wanted it, and we were able to get legislation that transferred the land to them.

It's very important, and the response is critical. If it's an emergency, you move right in, or if it's not, the situation can be studied. Actually, just as a sideline, I have been working on a book on the strategies and economics for contamination cleanup, because my feeling was that a lot of money has been wasted because of the approaches that we use and the way we go about it. I think, however, over time we're getting better, both the EPA and the DOD.

We're getting better at the way we conduct studies and cut down on site study time. Sometimes we get into a situation where you'd have 75 percent of your effort in studies, and the cost for the remedy was about 25 percent of the total. Or you study the site for eight or nine years to try to come down with the right solution, and the correction only takes 12 to 18 months. So you have to balance how serious the problem is and go in and quickly remove the contamination that is causing it. It's almost like going in and removing cancer. It doesn't get better until it's removed, or it can't get better until it's removed. But people are gaining experience to move in and deal with situations earlier than what we used to, because there were so many unknowns.

You didn't have a large body of knowledge, and you didn't have a large body of experience. Since 1980, we've really been now becoming experts on contamination cleanup where we never had that expertise before. Then the situation changed after 1980, where before, the user of the property had to clean it up. After 1980 and with the Superfund legislation, it was the polluter that was liable and responsible for the cleanup. The situation changed considerably.

There was nothing that the legal structure could do before 1980 to bring a culprit in for tainting the soil, groundwater, or surface water. Water laws that were starting to change the situation in the 1970s and were helping to

achieve change, but nothing like the impact of the Superfund. The RCRA, Resource Conservation Recovery Act, forced the issue of polluters paying as well.

Retired officers in private industry

MOORHUS: I have a broad question about the involvement of retired Army officers in terms of their relationship with the kinds of things that you were doing.

WALKER: Yes. It's common in the way people go out and have interests after retirement. You have to make a judgment of what you do after you retire, because I received calls all the time about, "Please come and work with us on this." You have to make your own decisions about what you want to do. I am not disturbed by being contacted; I've been called by retired generals or other officers.

MOORHUS: Have there been general officers, without naming names, or retired colonels, who have taken advantage of their knowledge of the military, the way the Army works, in a way that made it difficult for what you were trying to do?

WALKER: Well, no. They go out, and they work for firms. I had a lot of people coming by and seeing me. Private industry visited with me all the time. They may have hired a former colonel or a general. I didn't let it bother me. My position was always that I didn't let any contracts from my office. Contracting was done by others — by the Corps or by the other contracting officers.

Also, I usually said, "We don't research anything here. I'll give you future directions of the way I want to see the environmental programs going, and I will tell you about the past history of the funding levels," because they usually wanted to know. "What is the budget going to be and look like?" You can't divulge information, but you can give them a general picture. I had a fairly open policy. It didn't bother me if people did have some concerns.

One private contractor was determined that he could put pressure on the Army with congressional support to select his technology. Well, he's been investigated, because the FBI, the Army CID [Criminal Investigation Command], and the EPA general counsel came and talked to me about him. It was a Corps project out at Hamilton Air Force Base [San Rafael,

California]. He came in with a solution there, and Army got a lot of pressure to accept his solution.

He was going to use a hydrogen peroxide process to decontaminate soil in the area. When the Corps analyzed his technique, all he was doing was taking clean dirt and mixing it with contaminated dirt and getting the mix below standard. So when the situation was exposed, I was taking a lot of grief from a particular congressman. A member of the city council of the town of Novato, California, wrote me a letter and told me what he was doing, and that confirmed the little investigation Army had going on. So I sent a copy of this letter to the congressman who was giving me fits, and I never heard from him again. The letter also had mentioned that this was as bad as the savings and loan bank scandal that was going on at the time.

But I did get a lot of pressure from that individual, and another disappointing thing is that some of his early work had been fairly good. However, he was selected to do a FUDS cleanup at a place called Terra Santa in Southern California, a Corps project. I should have intervened, but I didn't, because he was selected as the lowest bidder. Two little boys had been killed in the area, and it was a politically sensitive area. It was an old Army/Marine training ground, and the two little boys had been playing with unexploded ordnance and been killed. He got the bid for about \$8 million, and the Federal estimate was roughly \$14 million.

At this site he was a manipulator, and he bought in at a low cost and then came back with change orders. When I retired, I checked on it, and the cost was almost about \$22 million that had been spent out there. But the project was finally done and Army was rid of him. He was later caught bribing an EPA employee at a site in North Carolina, and I think then he left the country. The last time the investigators were here, they didn't even know whether he was in this country or in which country he was located.

I did have other situations that bothered me, particularly when the contractor was caught falsifying data. After the Terra Santa contract, the Corps could not find anything fraudulent in the contract, just the overruns. But we had found them at Hamilton Air Force Base, that he was, I think by that point, close to being disbarred from doing any other government contracts, but they let him finish the one at Terra Santa. Then later on, he did have a problem down in North Carolina. The sad part was he was a former professor at the University of Kentucky [Lexington], and he knew better than turning to corruption. In the early days, there was too much money

and the growth of the cleanup program was rapid. There was a lack of discipline in the engineering science — everything dealing with contamination problems — because we were growing so fast. You hope that you would have professional development, but some people who entered the program were fraudulent or just corrupt in conducting the contract work.

If you look at the history of public works, particularly in the area of building dams, in the early 1900s, we were in a growth period of our experience in building large water resource projects. By the '30s, we had Hoover Dam [Nevada-Arizona border], and we had Grand Coulee [Dam, Washington State] by the late '30s, and projects along the Columbia [River]. We were maturing, and we were developing the expertise.

The same thing could be said about our contamination cleanup program. Large projects need expertise to deal with the problems. As a nation, we are still working on nuclear cleanup. Still, a lot of careful engineering and careful study need to go into the proper disposal of the nuclear waste, as well as the other hazardous waste that we have in this country.

Press relations

MOORHUS: I have another general question, and that is about your relationship with the press, which you alluded to in several cases.

WALKER: Yes.

MOORHUS: Could you talk a little more generally about that?

WALKER: Well, I guess my philosophy was always when you have something bad happen you get the word out as quickly as you can. It doesn't get better as it gets older, and secondly, it must be factual and truthful. And get your story to the press, because if you don't, someone's going to help you, on the outside. Try to put it all together in clear, concise language. I was never opposed to doing a lot of diligent work over a press release to make sure it was accurate and letting the statement stand as the basic document. You read a lot in the paper about what's fact and what you can call fiction, but what really is important is trying to get facts about the situations.

I even had some projects I worked on overseas, and one of the first critiques of it was done by the National Geographic, and I thought, "Here's a body that's very careful in their facts." It was the one we were doing in

Thailand. I came home on home leave and read it, and it wasn't really very accurate. It was unusual. The freedom of the press is very important, but I also think they need to be carefully informed, and I had several techniques that we used to do it.

The publicity was so bad at Twin Cities Army Ammunition Plant that I organized tours for people to come on and see for themselves. We would invite the mayors, reporters, and everyone just to look at it first hand. I think that, many times, the Army has a tendency to think that what goes on inside the installation, the public doesn't need to know about. On the contamination situation and contamination cleanup, there's nothing classified. I was very open, and that was my reputation.

MOORHUS: Did you develop particularly good working relationships with any members of the press?

WALKER: Oh, not really. Not any that stand out, it was just that — there were several reporters out in the *Denver Post*. You'd recognize their names. We usually made sure they got the press releases. It was the same thing up at Twin Cities Army Ammunition Plant, out of Hamilton Air Force Base, and a lot of areas on San Francisco Bay. My last round with the press, a major round while I was still in the Army, occurred over the Army apologizing for testing the dispersal of pellets over cities.

During World War II, we were very concerned and also wanted a retaliatory capability, of being able to respond if Germany or any of the Axis powers used chemical warfare against us, that we could respond in kind. One of the techniques the U.S. wanted to test, particularly in the northern cities which were similar to Germany and Europe, was to study the drift of any chemical agent over a city.

So this is the way the U.S. started out. There must have been eight or nine cities — San Francisco, Minneapolis, St. Paul, maybe Syracuse, New York, and others somewhere along the Northern tier. I can't remember, but there were some eight of them. But small cork pellets were made, and they were dyed with a type of material that would have a similar drift as agents in the wind dispersal over the cities. I think it was, again, *60 Minutes*, since they had interviewed me before.

The approach when they contacted me was to get the Army to apologize for conducting the tests. Several could remember that their relative had

passed away or had been sick after the pellets falling on them in these cities, and they were convinced the illness was related in some way.

I had the medical people go over this and over this issue. The material on the pellet, the pellet itself, contained nothing that would cause any ill health effects. Mike Walker was the Assistant Secretary, and we finally came to the conclusion where I said, "I will meet with them. They can ask me all of their questions. I'm going to retire in a little while anyway. No matter how it turns out, I will stay with the facts. I will not apologize. I will present our findings that have been presented and stick with my argument."

Mike Wallace was the one who was supposed to be there that day, but he sent someone else. Well, the reporter came in and went over this and over this, and I didn't budge. We went through the series of cities, and I stayed with my beliefs and what I had found about it. Consequently, it was never published. It never came out in the news. It was never used on their programs, so that was my last time I had to appear before them.

I appeared on TV when I provided testimony on the base closure, because the commission wanted to hear my position: "Why doesn't the Army keep installations that are contaminated? Why don't you keep them off the base closure list if they're contaminated?" My policy was that military value is first, and you don't keep an installation because it's contaminated. I said, "If that isn't your position, in a few years, all you're going to have left is contaminated installations. What does that tell your workforce? We're only keeping these bad contaminated sites, and you still want us to work at these installations?" I said, no, I didn't agree with that. The tapes are somewhere in the archives of the Base Closure Commission hearings. That was one of my appearances on national TV.

A tricky situation was the Twin Cities Army Ammunition Plant. Hubert Humphrey III came to town and wanted to meet with the Army in Congressman Vento's office. So I thought it was just a meeting, and he was the attorney general of the state. I took a member of the general counsel and an environmental staff member with me, and I went to meet with him. We walked into the room, and TV cameras were on in the small room we were in. He wanted me to explain what we were doing out at Twin Cities Army Ammunition Plant.

I told him, to the extent I could, and pointed out that it was very early in the program. But come to find out, he was going to make a name for himself, because he was going to run for governor the next term. Consequently, he didn't win, but it was very stressful to me to go in when you're just supposed to have a meeting to discuss the issues with the attorney general of the state, and it was not what you're expecting. You go in, and all of a sudden, there must have been about three TV cameras there from different stations bearing down on you. I was not too well-prepared, but I dealt with it the best I could.

You always have to be prepared, and you have to have some care about your statements so you won't be misleading. Have to be sincere about it. I don't know — the press is a very important part of our country's heritage, and that's why I got the press immediately when I had a problem. We always had a public affairs officer with us. I also had an attorney as well. If health problems were associated with the project, I had a medical officer with me, because in that situation, I would never speculate on the impact on public health. It had to be a physician, because I'm not qualified. Only a physician can make comments about the health, and he or she — they're among their peers in discussing issues with the health community. I am unqualified. If I said anything, I could be misleading, particularly on an issue as important as health.

I guarded that very carefully, and particularly when you had the attorneys advising on liability. Congressman [Michael] Synar was the one who called for the hearing at Checotah [Oklahoma], which was in his district. I remember Congressman Synar, and he kept wanting me to admit to Army's liability for the Checotah accident. I finally told him, "Congressman, I can't fence with you any more on the issue of liability, because all the attorneys here from the Army are saying we're not liable, and that's all I can say." He finally stopped the line of questioning. So it's just one of those things. You have to respect our public affairs system and the press, and you have to be sensitive to the feeling of people who are harmed, particularly by contamination and accidents.

6 Wide-Ranging Memories of a Career

Thoughts on environmental partners

MOORHUS: Have you had much contact over the years directly with any of the Chiefs of Engineers?

WALKER: Well, it starts out with [Lieutenant] General [John] Morris. I can't remember his first name, but he was at the Water Resources Council. He was the first one on that. [Lieutenant] General Vald Heiberg — I had contact with him when he was the Chief. General Hatch — I had a lot of interaction with General Hatch.

MOORHUS: [Lieutenant] General [Arthur] Williams?

WALKER: Yes, General Williams. Yes — oh, and then particularly the generals who were over Military Programs. One that stands out is [Major] General [Peter] Offringa. Also, I spent a lot of time with [Major] General Drake Wilson, who I think was head of the Civil Works program.

MOORHUS: Yes.

WALKER: More on the side of a Civil Works officer. So over the years, I've had quite an extensive involvement with the Corps.

MOORHUS: General Hatch did a lot of public speaking about issues of the environment and worked with a man named Bill Robertson about environmentally sustainable development.

WALKER: Right, yes. They did some of the early work on sustainability, and I think it's on the right track, particularly sustainable development. Some of that's been invested in sustainable range management, particularly on our training ranges that we want to preserve. Some of that would spill over, and it worked as well both in the Civil Works and Military Programs. It was at that time that we did have considerable interaction with him, yes.

MOORHUS: Is there anything you'd like to say about your overall relationship with the EPA over the years?

WALKER: Yes. Since EPA has responsibility for the air quality, our water quality and just overall quality of the environment, I had a great deal of respect for them. I'd worked with them when I was at the Water Resources Council. I continued to work closely with them when I was with the Army. I let them know that we had problems. Army did some of the early work, before EPA got into it, on approaches to cleanup.

We had a four-step process. Later on, EPA studied the Army's approach and actually incorporated it into their site investigation, and their remedial design. Let's see, they reduced more to a three-step: Site Inspections, Remedial Investigation/Feasibility Study — alternative considerations — and then the Record of Decision on the final remedy. Our approach, the Army approach, was very similar to that, but we had a third step. After you'd gone through the site investigation — Phase I — and then Phase II, a study of all the remedial alternatives, if it required research and development for the remedy, then we went into a Phase III, and then the final remedial action was Phase IV.

EPA came and studied the Army approach that we had actually started using. It was under way a little bit before I arrived at the Army, maybe six months. First, we started structuring our program to do all of the site investigations, particularly at the installations. It helped when the EPA did their National Priority List, that we had some of our site investigations we could turn over to EPA already for the risk rankings for the National Priority List determinations.

I worked very closely with EPA. Many times, if we had a problem, particularly Rocky Mountain Arsenal, someone would travel with me from EPA headquarters. I did that many times. It involved a working relationship and, like I said, when A.P. Hill came up, I called an EPA person right away.

It was like anything. If it was a problem with the Department of the Interior, I didn't have any problem calling the Department of the Interior and getting them involved. At EPA, we cooperated with all of the environmental issues except the Endangered Species Act Administration. We had to work with the Department of the Interior, because the jurisdiction fell there.

When the Fish and Wildlife Service closed the range down at Fort Bragg [North Carolina], we had several intensive meetings with the Department of the Interior. In fact, I even took General Sullivan, the Chief of Staff, over

to meet with the Department of the Interior. After that, I went with a team to Fort Bragg, and soon, the new \$25 million multi-purpose range was opened. But I guess since I came to the Army from the outside, I wasn't afraid to go to the outside to get help to resolve problems. When I didn't think that we could solve a problem ourselves internally, I would seek external help.

Unfinished business

MOORHUS: Were there any frustrations, when you got ready to leave the job, about something you hadn't finished?

WALKER: Well, I think that probably some of my disappointing areas were that I didn't work hard enough on pollution prevention inside the Army. That was one of the aspects that I had felt that it still stayed a very low priority. We were just getting started on better design of weapons systems and new systems coming on line that gave consideration to pollution prevention. We tried to find alternatives in new weapons systems that didn't have high waste streams coming out of the production. The approach was to find different materials that would not cause problems, such as cadmium, mercury, and lead. If a material is necessary for performance, yes, you go ahead and use it, but you manage the hazardous material very carefully. If you had an opportunity for alternatives with low waste streams coming off, then look for that.

I brought 3M Company [Minnesota Mining and Manufacturing, St. Paul], Texas Instruments, and a third firm that I've forgotten, to explain their waste minimization programs. They were trying to reduce their hazardous waste, and they described what steps they had taken. Oh, IBM was the other one; their hazardous waste generation had been reduced from so many thousands of tons for their corporation down to a much lower level. They changed the way they were operating to achieve the results.

So we started the process of thinking about how we could energize the Army to seek ways that we could lower our waste generation. We had made some headway, and I had gotten started the centralized management of chemicals on installations. We call it the pharmacy approach, where you'd have one office on the installation to buy and store the hazardous materials that were needed. They would keep the inventory. People would go there to check out only what they needed.

Many times, in the old system, where a lot of individuals were buying, they'd go out and buy large quantities, use a small amount, and then the remainder was left for disposal, or it would be just left in a building some place. Corpus Christi Army Depot [Texas], Fort Polk [Louisiana], and Fort Campbell [Kentucky] had started these pharmacies. I think there are about 60 now.

By the time I left, they were announcing how much they had saved in just this centralized procurement. They bought less. They had less disposal. The chemicals were carefully managed, even down to the point where fire-fighters, when going into a burning building, knew exactly what they would face if they got into the building and in which room. There was the value of a good inventory.

That should have been pushed harder earlier, but it just wasn't. I've since heard additional reports of how much this has improved Army's hazardous waste management, particularly up at the Aberdeen Proving Ground, with centralized buying. It's just one of those areas that I guess we just didn't work on it hard enough to make a difference.

Management style

WALKER (cont'd): I was going to mention my style of management.

MOORHUS: Good.

WALKER: Around the Christmas/New Year's holiday season, government activity gets very slow, and I usually took time and always drew up program goals for the next year. I'd put them on the top of my desk, and every so often I'd just look at them during the year. Sometimes, the goals would stay the same, and sometimes they would change. Goals or pursuits, I guess you'd call them, and I did that each year.

Then another style, which is a strange thing — and I've always done it, and everyone laughed at it — was that I always keep a steno pad. This one is marked "Number Five," since I'd been employed by the University of Oklahoma. Every day, when you go in, you write down the date. Then you keep a record of your telephone conversations, some of your meetings, and items that require action. So I have always had a large number of steno pads. When I was in the Army, every once in a while, I'd have to go in, and we'd have to dispose of them. But it was a large number, so you could go

back and see on this date what I had down. It was a style, and whether that means anything to anyone else, that was my style, using the steno pad.

MOORHUS: Did you keep them?

WALKER: Yes, I have some of them still, but many I've disposed of, because there are too many after all these years. I go through them until they're used up, and then I get a new number, and I go on to the next one. I can go back when I was at the University of Texas [Austin], and then some back when I was in the Army. But that was the way I kept track of the day-to-day activities. It's a diary, but it's the way you could keep up, and many times if you — particularly, if somebody calls you and asks you about things, an assignment or action, you can keep a record of that. You get names and telephone numbers.

The other management philosophy I have is always try to make meetings productive, to figure out how you can come out where you either give guidance or you learn something new to give better guidance. And never go into a meeting that you've got to beat someone up, or you've got to be terribly defensive. Many times, at a meeting, if you get everyone to the table, you will find out a lot more than you knew before you started the meeting. I'd read, a long time ago, that that was the style that Abraham Lincoln had, that he tried to make everyone feel good and to keep everyone moving in the right direction. I mean he was in control, but he respected everyone around the table.

I was always told there would be times when a person comes in that you've really got to be stern, because things haven't been going right. I never went along with that policy. I wanted to find out what the problem was, why he or she had difficulty and see if there was any kind of fix, rather than just a reprimand and sending the person on his way. Maybe it wasn't his or her problem. So that kind of gives you a view of my management philosophy, and I don't know whether it was good or bad, but I always thought it was good.

MOORHUS: And it worked for you.

WALKER: It worked for me.

Impact of centralized installation management on Army environmental activities

MOORHUS: What was your reaction, or what are your thoughts, about the creation of the Assistant Chief of Staff for Installation Management, the ACS(IM), and the transfer of responsibilities for the environment?

WALKER: Well, it was quite a thing when that happened, and I think that it lost a little bit in the transition from what the Engineers brought. Actually, I think in the previous ACS(IM), they had an Engineer. Van — let's see —

MOORHUS: Major General Robert Van Antwerp?

WALKER: Antwerp, a fine officer. Now, I think he's gotten his third star. They brought him in to implement some improvements. But, a lot of things led to that. Several of the political appointees got very unhappy with the way things had been working, and I don't know all of it.

MOORHUS: Susan Livingstone was unhappy.

WALKER: Yes. Even Mr. Shannon was unhappy, that that was not the way to go. They believed the program needed adjustment, and at the same time, they got the ear of someone, maybe General Sullivan. But General Sullivan thought that the Corps of Engineers and the way they were going about it was costing too much. They wanted someone, though, that could bring installation management together better than just having the Engineer philosophy. Also, there was developing a feeling that the Corps of Engineers was not taking care of the installations as well as they could, and somebody needed to have a more holistic view.

However, the engineering side has a discipline and a systematic approach that is a lot better than a lot of other organizations. So, you didn't want to lose that, and that's why they needed to keep some Engineer officers in the organization. But things are changing. I had an opportunity to bring in, about four years ago I guess, an individual from Australia who was skilled at managing installations. A friend of mine from Canada was down here as well.

They have actually changed the whole philosophy, in Australian military defense, of how they manage their installations. All of the services are now tenants on their installations, and their MOD, Ministry of Defense, owns

them. It took them 10 years to make that transition to a better management approach. They centrally manage the installations. They provide for consistency of delivery of services. They do a lot based on population served at an installation. Then they can judge how many gyms they need, how many certified firing ranges they need, how many laundries and so on, but it's all consistent.

If you go from one troop installation to another troop installation in our Army, a lot of times you don't even recognize it. The names are all different, but it's a different philosophy at each one. The Australians told me they had the most difficulty with the Navy accepting the change. But they have changed, and the prime minister and the minister of defense have received less complaints about the new system than they did about the old. Plus, they've saved about 30 to 40 percent in overhead.

They said they feel that the deliveries of services to an installation are much better in the new system. It's consistent at least. The friend from Canada said, "We're going that way, and the U.K. [United Kingdom] is studying the Australian approach, because they're thinking about going that way."

Now, the Army has picked up on that. The Army has centralized management of all Army installations for consistency. Now, it's had its growing pains. My recommendation, before they started the ACS(IM), was that they go down and study the Australian approach. Army thought about it a little bit, but then they decided they didn't want to do that. I thought they could have gained a lot, because they moved faster than the Australians on the issue. The Australians studied it for 10 years before they implemented it and brought it to fruition.

Eventually, I think that probably, maybe in another 10 or 15 years, that's what's going to happen here in the U.S. I think that we're going to move to a ground force, an air force, and a sea force, and that it'll become immaterial. There's a lot of jointness, and the installations will lose their identity. Then you can focus on your core mission, and you don't have to worry about having assets tied up in trying to manage installations. It's a hotel approach, or it's a whatever you want to call it, a park service approach. Everything's there and laid out for you. You come and do your mission, and you go on.

But I know that was hard, and there will have to be some adjustments maybe in philosophies, but there were some very strong personalities involved in that when the ACS(IM) changed. But it's a trend, and like I say, I think that there will be DOD centralized management of installations some day.

Another thing I tried to centralize and never could — talk about unfinished items. One of the things I wanted to do was to centralize for DOD, the same way I had for the FUDS, the contamination cleanup, the Defense Restoration Program. That was one of my failings that I wanted to do. Secretary Stone asked for ideas of where we could do centralization, and that's what I gave him. He took it up to Secretary of Defense. I estimated that it's probably \$20 to \$25 billion to clean up all that needs to be cleaned up in DOD. If you centralized it and reduced the overhead, you could probably save \$4 or \$5 billion over the 25 or the 30 years that was needed to complete the cleanup work. That included a lot of the unexploded ordnance clearance we had to do.

I was using the example of probably how much we'd saved from having FUDS centralized, and I didn't say that it had to be with the Army in the restoration program. It could have been in Defense, or it could have been in the Army and centralized there. It will save quite a lot of money. I haven't heard recently that it's even been considered again. Now naturally, the Air Force and the Navy would oppose it, but that's just one of the things. If you're looking for efficiency and effectiveness, you could centralize and save money.

I think that's probably the biggest thing that I didn't really fight hard — the Clinton Administration wouldn't listen to it. Secretary Stone had been the last one in the Bush Senior Administration that would go along with that. OSD, during the Clinton time, did not want to take on the other services and try to do something like that. It may have needed someone to look at it from the standpoint of needing Hill legislation to do it.

One of the things that I helped a little bit and made sure the Corps got involved was when Congress decided that DOE [Department of Energy] was doing a terrible job at their formerly-used sites. I had been retired for a year or two. I was called up to Senator [Pete] Domenici's office, and they queried me about management of cleanup programs.

Senator Domenici, I guess, and some of his staff members had already made up their minds they were going to transfer what they called the FUSRAP [Formerly Utilized Sites Remedial Action] Program, similar to Army's FUDS Program.

Senator Domenici got legislation that transferred that to the Corps, and I supported the decision. I went over and worked with Pat Rivers for a little while to make sure that the Corps did not falter. Because the Corps would have gotten it taken away from them. There were too many very powerful contracting firms that wanted the program to stay with the Department of Energy. They actually were not interested in progress. They just wanted to see how much they could milk the program. So it was the right step. I was even advocating going the full step by turning all the remediation over to the Corps. But Congress only wanted to see how the Corps could handle the FUSRAP Program. So that was an example of where the Corps does have the expertise to manage a large complex program like that.

MOORHUS: You use that as an example of the kind of activities you've been engaged in since you retired, to draw on the kind of experience.

WALKER: Yes.

MOORHUS: Would you like to talk about some more of those at this point?

WALKER: Yes.

MOORHUS: Or should we do that next time?

WALKER: Why don't we do it next time, and I'll think about that a little bit.

MOORHUS: That's good.

WALKER: Because I've got all the foreign experience to talk about.

MOORHUS: Yes.

WALKER: And then things that I've been involved in since retirement.

MOORHUS: Good.

WALKER: Okay.

Memories of COL Magness

MOORHUS: I thought it might be okay to start today with you talking about Colonel Tom Magness, who passed away within the last month and who I was going to interview. Since that's not possible, and you have some thoughts about what he has accomplished and what his contributions were, that would be helpful.

WALKER: Yes. Colonel Tom Magness was an outstanding officer and did much to get early thinking in the Army about the environmental responsibilities that we had. He was the first person to establish such an environmental office in the European Command, USAREUR. One of the things that impressed me, that came out of his accomplishments over there, is that he published a pamphlet that was written at the level for soldiers to understand about their responsibilities for taking care of the environment. I think I have a copy some place, but I couldn't locate it.

It was the first attempt to appeal to the soldier that we needed to do things that would protect the quality of our environment, the quality of the water, the quality of the air, and the land resources. I was impressed with that so much that we met with him in Germany. Then when he was transferred to the United States and to the Pentagon, we were able to get him into the Army staff to head up the environmental program. His great accomplishment here back in the States was he helped set up the first and second environmental leadership conferences.

The first was a very small conference just to get it started. We had it here locally, and then the second conference we had in the Norfolk [Virginia] area and had the Secretary of the Army as the keynote speaker and to kick off the strength of the environmental program. Mr. Jack Marsh was the Secretary at the time, so that was the type of effort that we had. That was a time when a lot of people, particularly the senior members, didn't appreciate the concern over the environment, and when they thought that the mission came first, which was right in itself. But, you also had responsibilities for taking care of the environment.

Knowing that we had to be a good steward of our environment, we also had to be a good neighbor, because contaminating somebody's ground water and drinking water supply was not the desirable thing to do. You had to step up to the responsibility of doing that. It was officers like Tom

Magness who could speak to the staff and to the installations. The installation is really where it takes place. You have to communicate at that level. Army environmental policies had to make things happen at the ground level, or they're not effective. So Colonel Magness was very good at writing directives and getting them to apply at the installation level.

Also, working with our efforts and our environmental leadership conferences, we always had senior staff represented. We had major commands represented, and then we had installation representatives there to the extent we could. We were very careful about the selection and made sure that they came from all different parts of the Army. We have the troop installations, where they have responsibilities of taking care and a lot more efforts in conservation of natural resources, to the installations of our industrial-oriented arsenals, the ammo plants, and the depots. Each type needed to attend, so we were very careful about making sure we had representation.

MOORHUS: Since environmental awareness was not common at the troop level and at the higher levels, did you ever have a conversation with Colonel Magness as to the origin of his own interest and commitment to the environment?

WALKER: It is possible that we did. I can't recall. I know that he was very dedicated, and it came out of the fact that he had changed from a different branch of the service — I think it was artillery — to the Corps of Engineers, where he could apply his interests better and easier than he could staying strictly as an artillery specialist. He kept up the dedication, even though he had been severely wounded in the Vietnam War. He kept up that dedication, and he decided that he could serve better and serve the interests of the Army and the nation better if he served in the environmental program.

To that extent, from the various meetings and from his kickoff speeches at the environmental conferences, I could tell that he was a very dedicated person to the environment. There were other officers out there that have that same feeling that wanted to work with the environment as well. It was an emerging program. In terms of a lot of government programs, the environmental program is very new.

More about the origins of Army environmental work

Growing national environmental awareness

It was during the '70s that many of the Clean Water Acts and the Clean Air Acts were enacted, and then by 1980, the Superfund law for the cleanup was enacted. Then, more stringent measures were put in place for individual liability if you violated the environmental laws. That was the measure that really forced commanders to understand that they were personally liable for any act that someone might commit on the installation. So the Federal laws, the national laws, and the national movement caused the environmental program to get underway. We had gone through the late '50s and the '60s of seeing pictures in magazines of the horrible river conditions and of deplorable contaminated water.

There is the story of one river in Ohio that was actually so polluted that it caught on fire. So, the movement was there, and then that's why you saw the reaction of so many national laws being passed in the '60s and the '70s. NEPA was first. The RCRA, which was Resource Conservation and Recovery Act, contained a lot of the personal liability requirements in the way of managing your hazardous materials, waste and the damage that it had caused. Also, there were the more stringent measures in the amendments to the Clean Water Act and the Clean Air Act.

But, it was a time when the nation wanted [it], and actually, had that not been the case, you probably wouldn't have seen the offices being established on the Army staff and the Army Secretariat. They would have just let the Environmental Protection Agency take over many of the responsibilities and leave the military lands alone. The environmental movement brought the need for Federal involvement. Originally, the Environmental Protection Agency was in the Department of the Interior, and they called it the Federal Water Pollution Control Office. Then it eventually became the Environmental Protection Agency, a separate organization. But it was a national movement, and many people wanted to move toward better environmental quality. Some of them embraced it and wanted to further it. Others wanted to just, "Well, as long as it doesn't bother me, I'll leave it alone, and I won't have anything to do with it."

MOORHUS: Do you remember or can you comment on any of the other colonels who headed the Army Environmental Office while you were there?

WALKER: Well, there was a Colonel Halleran. I can't, for the life of me, remember his first name. I think that he was before Colonel Magness. Colonel Magness was on his staff. I remember the situation with Colonel Halleran, and I was a little worried about his motive, but when it came down to one situation he made the right choice. A large project had to be undertaken by the Army, and he was called in and asked, "Why do we have to bother with an environmental impact statement?" and he stood up and said, "You have to do it because it's the law," and his leadership didn't want to hear that. He was under a great deal of pressure to change his position. His superior came up to my office quickly to see if I would overturn his decision. I said, "No, he's correct, and General Counsel will support it."

Then when I first arrived in 1980, there was a West Point graduate, and he was on the Army staff. He had the environmental program there, but his interest was that he wanted a place on the Army staff for a short time until retirement. Then I think Colonel Halleran came, and then it was Colonel Magness. They've had a series of one or two more, and then General Brown came in. I definitely think you should interview General Brown, Jed Brown.

We used to get notes back about, "Who cares about the environment? Why are we spending money on the environmental programs, and who cares about it?" But you had to go through that situation that you're called to do as a civil servant, follow the national priorities and work on this problem, because we couldn't go on like we were. We couldn't gamble away or use up our environment, the quality of our air or the quality of our water for economic development and still think that we were going to remain a strong nation doing it.

Recent reports are coming out of some of the many world areas and particularly in China — I don't know whether you've read those. The environmental conditions are deplorable for about two-thirds of their cities. In some of their mining areas the people have skin that is falling off, and you hear of that kind of bad conditions from air and water pollution. If you gamble away your environmental quality, you suffer the consequences. There's an area in Czechoslovakia that is called the Area of Death, where you receive a bonus for working there because the air quality is so horrible. It's not quite the translation. Then in many parts of the former Soviet Union, the Aral Sea and other places, they've used up their environmental resources. There are serious consequences, particularly health effects on the

children. You see many areas of the former Soviet Union and other countries with horrible defects in children.

My wife was involved in a program for a time here at our church where they were bringing children over from Russia. If they could stay here in the States six weeks and get better air quality, then their life expectancy would be extended several years. That's why you need balance between your economic activities and your environmental quality pursuits. I believe if you work at it hard enough, it is possible to achieve a good balance.

One example is that we still have trouble with our American industry of embracing environmental sustainability the way they should. I used to bring companies in and have them tell us about how they were doing pollution prevention. I think it was with Colonel Magness when we did this. It was a way to find out about how Army could improve.

Another example I used to use was with American industry and its response to air emissions in cars. They fought it, and they jerry-rigged the efforts to comply. My American car, when I take it in for emission inspection, I do pass, just pass. With my wife's car, where they have embraced the environmental ethic — her Honda coming from Japan where they have really embraced it — they take it on right at the concept -- her car has extremely low emissions. They're so much below the American standard, and it's the fault of our system, not responding the way we could, because we have the ingenuity. We have the wherewithal to do it, but ignoring the problem does not help the situation. It's just jerry-rigging it the best you can to get by. You get by with it, and maybe it'll go away, but that's not the way to approach a problem.

But it was certainly refreshing to be involved with an Army staff officer who had the dedication, because then the Secretariat and the Army staff worked very closely together to make the right things happen.

MOORHUS: Were there people you worked with particularly in the Office of the Secretary of Defense?

WALKER: Yes. Actually, I would have never made it and passed the test with[out] George Marienthal. He was the first, and it was very early on that he established the office in the Secretary of Defense's Office. I went to interview him. In fact, after the Assistant Secretary of the Army that was interested in me coming, I had to go up and interview with George Marien-

thal. He was a very dedicated person and established most of the early environmental policies in the DOD. He was incredible how he would bring all the interested parties together. They would develop a policy memorandum, and he would conduct a very thorough coordination effort. He always was very high on coordination.

I went up and interviewed him and passed muster with his questions and the replies he had for me. I always liked his style. Now, later on after a few years there, he got caught up in one of the squeezes — normally there's not just political but also clashes between personalities. I think he left for the Department of Energy for a time and then to the Department of Agriculture. I've lost touch with him. But I would say that he guided me when I was first there, as well as several people on the Army staff, to get me used to the inside of the Pentagon.

He helped get me established so I could go on and set the same style in the Army. He had a style of developing military program policy there that was a great help in furthering the program. He was very dedicated, and along the same lines, he was trying to make sure that the Department of Defense took this matter seriously and did not just treat it as something that we could shamefully hide. He wanted us to feel good about what we were doing. So he was a key person when I arrived there.

There were others up there, but I don't think they ever found anyone that would come in and develop sound policy in the Secretary of Defense's Office. There have been several others, and they worked hard to do and take on pursuits but not like George in those early days, when everyone was not too overly enthused about the environmental initiatives.

Military environmental issues in Europe

MOORHUS: Would you like to talk now about a couple of the activities that you were engaged in, while you were working, that involved overseas activities? You were chair of some NATO activities and commissions.

WALKER: Yes, right. They wanted some higher-level participation in the environmental issues in Europe, and the focus was a lot on maneuver damage, noise, and water pollution. So it was decided that I should become involved in NATO. I went and met with Mr. Moran, the director of the environmental program in the NATO Council.

Under a committee that he worked on — it was CCMS, Concerned Citizens for a Modern Society. He was involved in that, and we made a decision that we would try to form a group. I think it was already being formed, but it had the representatives from the various NATO countries there to work on environmental initiatives. One of the things that came out of that was the effort to encourage environmental awareness in the NATO armed forces.

We developed a questionnaire that went out to all the countries to determine how they were furthering environmental awareness in their armed services, and with that, then we decided that one of the things to do was to develop a video. For the life of me, I tried to find my copy, and I'm not sure where it is. We developed a video, and it was a composite of all the NATO troops and how they handled oil spills, how they cleaned up communication wire to prevent losses of animals in getting tangled up and dying or being injured, preventing oil spills on high seas with the navies and reducing maneuver damage.

We did the video for about \$300,000, and it was very effective. In fact, in Chile, when I was doing some work with the military attaché of Chile, they showed it to their armed services, and they were quite pleased with the effort.

There was another product, which as I remember was a NATO brochure that was patterned after COL Magness' brochure. But it would be useful for any NATO armed forces person, because it had information for all the services. Those were the main efforts. Then there was an exhaustive effort that we worked on noise pollution, particularly artillery noise and helicopter noise. We also spent a lot of time working water quality issues with Germany.

Later on, we decided that, with countries, we needed a very careful data exchange on what information we had. It actually was reflected in the questionnaires. Some were very detailed, and the questionnaires came back full of information on what they were doing, for others, the responses were just very general and not specific. So then we decided to place an emphasis on environmental data exchange. We'd go country by country, and then one of the U.S. military services would be the host, depending on the activity by a service in the country.

The Army developed the formal data exchange with Germany, and of course, we included U.S. Air Force and Navy people when Army met with the representatives of the Ministry of Defense in Germany. Then the Air Force took the lead with the United Kingdom and Spain. Navy worked with Italy and some of the other countries. We wanted to share what we'd already gained here in this country, because environmental impacts are worldwide. I believed if you have knowledge, then you should be sharing it, because we all have experienced the degrading environmental quality throughout the whole world.

In trying to do the best that we can for protecting of environmental quality, it's costly to do research. If we've done something worthwhile, we should share it with other people. It was my firm belief that we should be sharing so they wouldn't have to spend so much on all the trials and errors of trying to find out what was right and what was wrong. We also found out Germany was doing a lot more than we were in bioremediation and other types of waste treatment. So we started that effort, and I think the data exchange with Germany is still going very strong. I got a report here a few weeks ago that Army had been over in Germany exchanging ideas and data on environmental protection, so I am glad it has continued.

Like I said earlier, I went to Poland in May 2001, and they wanted to know, along [with] several other of the former Soviet countries, how you integrate environmental programs and military programs. I conducted a workshop during the Partnership for Peace conferences on how you go about it. Again, it was a classic situation of trying to get the military to embrace environmental quality and to know what they should do to get it ingrained into their system. So, our last day, we went out to a military installation, and I pointed out that, "This is where it starts. If you make something happen on the ground, this is the place."

But I want to go back to the maneuver damage in USAREUR. We were spending something like \$50 million per year on maneuver damage. When you destroy historic properties in Europe that are very, very old, it's very costly to repair them. You go out there, and it was quite an effort. The Secretary asked if we could look at it and see what we could do. So, we were able to reduce, with improved planning and careful attention, the maneuver damage. I can't remember how much, but it was written up that we had made quite a lot of progress in reducing maneuver damage.

MOORHUS: What could you do about noise pollution, particularly the helicopters?

WALKER: That was a very difficult thing. We actually designed and worked with them on better routes to fly to avoid schools and populated areas. It was not easy, but we reduced the complaints. This is one example of where George Marienthal was good at working on noise pollution. He would bring in different vendors and show different ways they had reduced noise. His prime example was always showing lawnmowers. He had a whole array of lawnmowers, and we would listen to them. Without even trying to design for less noise, some vendors had lawnmowers that have lower noise levels. I think that on helicopters we may have made some headway, but it was with the careful following of routing. I think that they're getting the levels down now, but it's still a problem with the helicopter noise.

Artillery noise — we actually did some berming, some tree planting, and some, I think, redesign of the muzzle, the end of the gun tube, as I recall. But artillery is still a problem. We encouraged local governments to always zone for non-noise-sensitive activities near the ranges and not have it for residential use. So you would want to keep the real noise-sensitive activities as far away as you could.

Now, it's not easy to do that in Germany, in Europe, and in Japan and other places where the population density is high. But you can do some, and that's where we made some headway. I think at Wildflecken range was where we had most of our noise problem in Germany from artillery. The range finally had to close, and it was moved to another site that had a little better opportunity to handle the noise situation.

Additional recollections of Southeast Asia work

MOORHUS: Tell me now about some of your international activities.

WALKER: Well, my first experience was when I was selected on a team to go to Thailand and Laos and to work on water resources projects. I was a resource economist and adviser to Thailand and Laos. The notion was that the administration under President Johnson had decided that they could build large capital projects in Thailand and Laos, that would improve the economy and also would probably prevent those areas from falling under the Communist influence. That's why our team went there.

We were actually benefited by [Lieutenant] General [Raymond A.] Wheeler, of the Corps of Engineers, who had toured the region and had made quite a thorough assessment of the water resource development potential throughout Thailand and Laos. We were to do detailed studies on building a large dam across the Mekong River called the Pamong Project. The hydro-electrical output was twice the Grand Coulee [Dam] production, and I can't remember the numbers, but that's what we used to use as a benchmark, so it was a very sizeable electrical plant.

It would irrigate some two million acres in Thailand and I think about five hundred thousand acres in Laos, giving them a dependable water supply year round in poorer areas of Laos and Thailand. Even though it's in the monsoon area (the northeast part of Thailand and the part of Laos), the so-called monsoons were not dependable. They were sporadic. Sometimes they would arrive when they supposed to, and sometimes they didn't. So this project would give them a year-round supply of water. In a crop rotation situation for that region, it would give you three crops a year, so you'd have three times the productivity that you had before. That was going to be quite a benefit.

We had studied other areas, in Thailand particularly, where irrigation was a traditional practice, and that's what occurred. They knew how to do the three crops per year, so we were quite confident that this would be the result. This gave me the experience of working overseas, accomplishing things overseas and conducting studies. I had a very talented staff of Thai economists. Some of them were direct-hired, and some of them were assigned to me from the Thai government.

I had a very skilled group to go out and do our economic studies that we had to do. We did archeological assessments and actually, we conducted the forerunner of environmental impact assessments, but we didn't even call it that at that time. Also, we looked into waterborne diseases. We looked into aquatic weed problems that they had elsewhere in the world with their irrigation problems. In addition, we looked at the resettlement of the refugees or anyone to be displaced from the impoundment of water after construction of the dam.

While we were doing the studies to look at the feasibility of the large project, the Pamong Project, there were three or four internal projects to Thailand that were smaller in scale but had a lot of economic development value, and then two or three in Laos. Just a sidelight on this is, when I re-

turned to Laos in 2000, the two projects in Laos had been completed, and they were providing hydroelectric power and were exporting most of it to Thailand.

These revenues were paying about 80 percent of the expenses for the Lao-tian government. So it was clean energy turning over, regenerating, not depleting, energy, and doing very much for the area as we predicted they would do. It's an area that has considerable hydroelectric potential. It was providing a lot of benefits for the country.

One sidelight on the Pamong Project: It had an \$8 million estimate of fishery resources benefits, because this large area would have a very large water surface and 104 different species of fish that we identified already in the river. Fishing benefits would be maximized, so they would provide about \$8 million in annual revenue from the harvest. It is a protein-deficit area. It desperately needed protein, and that was one of the beneficial aspects of project development.

The other projects in Thailand, as I understand, have been built, and they're doing very well. But the political instability kept the World Bank from supporting the large dam.

I always say about 35 or 40 million people will never have their lives any better unless they develop their water resources and have low cost electrical supplies. I know that there are others that say, "Well, it should stay the way it is," but that's about the only resources that they have going for them, their agricultural production and the development of their hydroelectric potential.

MOORHUS: Did your experience in Thailand and Laos have an impact on any of the specific policies that you developed while you were with the Army?

WALKER: Yes, I think it certainly did. It was quite an experience for young people, my wife and me, to go over there and to work in Thailand and Laos. Also, you had a situation where it was a constitutional monarchy that you were working in, but really, it was under a very strong prime minister. It almost bordered on being a dictatorship, but the Thais were people who had never been part of a colony, so they didn't have any resentment for it. A lot of the Thai leaders had been educated overseas, so the situation was different than being in Laos, a former colony of France. There seemed

to be some resentment against Europeans and Americans in Laos, because they didn't want to become an American colony. So you had two different situations.

But looking at how those two nations made decisions under the different regimes was a very interesting situation. The one policy that we always had to follow, and a lot of people just hated it — some of my fellow Americans did not like to do it. You wanted to conduct work in Northeast Thailand, and they were divided up into provinces called changwats. You had to get permission from the central government to do what you wanted to do. I would go in and dutifully go to get that permission from their Department of Interior, which was actually their police and administrative structure instead of [being] like our Department of the Interior, which is natural resource management. After you got that, then we would go to the capital of the province, and we would tell them that we wanted to work in these certain areas and their Amphor, which were similar to our counties, and we wanted their permission to do the work, so I would get it. Then we would go to an Amphor. At the Amphor headquarters, our county seat, was the commissioner (Nia Amphor), and you'd go to the office and say, "We want to work in these certain villages." We would explain the work and then he would write letters for us to give to each one of the village head men. That was our approach.

They had another sub-district called a tambon, which is a cluster of several villages, but it seemed like the authority was from the Amphor right to the head men, and that's all we needed to do. I religiously followed the protocol just because it was the only way you could get things done. The others would complain bitterly about the bureaucracy, but if you didn't follow that, you'd never get anything accomplished. They wanted to know what you were doing. They didn't want to cooperate with you if you hadn't followed that one simple rule of going the extra step. You just couldn't go out and simply start surveys.

We did a lot of selected interviewing, and also we organized large-scale interviewing of many of the farmers. I think 5,000 were in one survey of an area that would be included by the development. We were assessing their attitude and, first of all, finding out their holdings, the size of their farms, their yields, getting an understanding of the benchmark for the current economic activity and also getting the population of the municipalities and villages to see how much water they would use.

The pathetic thing during the dry season, which was quite a long period (from late September to early May) in Northeast Thailand, was they would be carrying water probably five or six kilometers to their village right in the worst part of the dry season. That would have been about three or four miles. It was just a horrendous task with all the other things that they had to do, carrying water that far and in such heat. So there were many things that had been improved, and we documented the problem.

Just seeing, some of the times, the difficulties the two countries had in making decisions, because they didn't have a structure like ours to where we debate a lot of change – when we're going to have a new law or a new regulation, we have a way of vetting it as it comes up through the system. We'll know whether it's going to impact, as well as its strengths and weaknesses. In their system, a kind of dictatorship, when they made a decision, sometimes it was not received well and caused riots.

The Thai government had 32 bloodless coups before we got there [but after] the constitutional monarchy started in something like 1928. They had a different way of handling decisions, so they were always very sensitive about how they made national decisions versus our situation.

But that was a growth experience, and then coming back to the States was exciting. I didn't realize I was going to come to Washington, D.C., but I was fortunate to be selected to come back to Washington, D.C. Then I started working first with the Department of the Interior, then the Water Resources Council, and then over to the Army. But I think the basic part of my development was the overseas experience and what I had studied when I was in graduate school and in my undergraduate work. My focus was on Federal programs and policies, political science, economics, and a lot of technical sciences. I had an appreciation for working in Washington, D.C. Also, some of the people that I worked with were skilled in looking at the bigger picture of how things are shaped, moved, and monitored.

Let's see. I think that I always had an appreciation for large scale program management. In policy formulation, coordination was always very high on my list, to have something carefully coordinated so you didn't miss something. It is quite a difficult thing in policy formulation if you overlook or leave something out. I guess that's why, later on, I really embraced the environmental justice considerations. A lot of times, we did not consider all the aspects of what we were doing with our environmental decisions.

It is just an example that those areas that are not very well-represented get the landfills and unwanted projects, and the system takes advantage of that situation. In fact, I started out, even before we had a regulation, by requiring in our environmental impact statements a section on environmental justice and how, if there's any issue, it should be treated.

There was another thing that I put in environmental impact statements (EISs), particularly if it was a weapons system or a new chemical round or anything of that nature that was going to be a difficult environmental problem if you had to destroy it (demilitarization after the fact). So, we started, in about the mid 1980s, that we had to have a demilitarization plan for weapons systems that would have a lot of hazardous materials and particularly the chemical rounds in all EISs.

One was called the binary round, which was the chemical round that armed itself in flight. The chemicals were mixed in flight. Well, it turned out that the demilitarization plan was going to be much simpler for the binary round than the incineration that we had for our older chemical stocks. For the binary, until they're mixed, they're not lethal. So if they're not rotated and mixed, as they do in flight, they're much easier to separate and decommission at the end.

Those were some of the things we saw early on that needed to be included in the environmental impact statements to shape our decisions and considerations on new projects. I'm trying to think of something, but we're kind of diverting away from international activities.

MOORHUS: Some of what you got out of the experience in Thailand and Laos was process.

WALKER: Yes.

MOORHUS: What about any particular concern, any environmental issue? Were there any that came to the fore over there that then influenced anything you did in the Army?

WALKER: Well, I guess it was the fact that we had taken on things to do in an environmentally sound way. We actually started giving consideration to the environment, and by the time we got back to the States, the 1969 NEPA [National Environmental Protection Act] environmental policy had been passed, and we were reflecting on the fact that we'd started working a

little on environmental impacts while we were in Thailand. One of the things that came to mind is the waterborne diseases.

The U.N. was very concerned that we were going to make the same mistakes that the Russians had made with the Aswan Dam in Egypt with the waterborne diseases. The year-round application of water coming out of what was afforded by the Aswan Dam had a snail, and it spread schistosomiasis, which was a parasite that would attach itself while you were working in the water. It caused a lot of adverse health effects along the Nile River in Egypt.

Well, they were very concerned that we were going to do the same thing with spreading all the water year-round throughout Northeast Thailand and Laos. So we invited the World Health Organization to come work with us on the problem. They discovered that the sulphur content of the Mekong River was at such a level that that particular snail would not live in it, and so it solved the problem. I guess that brought to mind not to ignore a problem, but go at it and try to find the experts who can help you resolve it. That was one. It seemed like there were several, but they're not coming to mind here.

Highlighted items of interest

Cooperation with local governments

MOORHUS: Since you were talking about the environmental impact statement, I'm reminded of one of the major projects that the Army undertook in the early and mid '80s. It was the construction of Fort Drum in New York.

WALKER: Yes.

MOORHUS: It was one of the first new installations built from scratch and a very large one, and I know there was an environmental impact statement done there. But do you remember any particular issues about the construction of Fort Drum?

WALKER: No. I think that what it was that impressed me about Fort Drum was that all parties were very eager to do the environmental impact statement right. Also, we got a lot of cooperation from the New York State environmental office in making sure that it was accomplished timely. The

governor definitely wanted the Division up there, but they also wanted to make sure that we addressed the environmental impacts correctly.

So the local-state cooperation was very high, as well as getting EPA's review and getting it filed with the Council on Environmental Quality on a rather fast track. I think that's all. I don't recall any issues with Fort Drum, no.

MOORHUS: Okay.

WALKER: I do recall the one about the good cooperation that we had with the state, but in the same time, if there was a problem, we wanted to resolve it.

Wetlands protection

MOORHUS: Did you get involved at all with wetlands?

WALKER: Yes, particularly on an Army installation. Yes — quantification of our wetlands so we knew how much we had to deal with and what measures we had to take to protect the wetlands. We did have a take of wetlands even as close as Fort Belvoir. We had a small take of wetlands when we built the DLA [Defense Logistics Agency] headquarters building at Fort Belvoir. We actually — it was on the edge of Davison Airfield — developed twice as much as we had taken, and that's where the wetlands were relocated. I don't remember the details, but that was one that's very near here on wetland protection.

We actually — I think it's closed now, but Seneca Army Depot [SEDA - Seneca Army Depot Activity, Romulus] in New York — we were able to work out, with the State of New York, a wetlands protection area and use the wetlands to accommodate some of our very low level hazardous flows, and it was dissipated in the wetlands. That was worked out with the State of New York.

So it is doable to use the wetlands for purposes other than the protection of wildlife and ecosystems. I can't remember the details of it, but it had something to do with very low level waste coming from the processes at the depot. We were able to use the wetlands to serve as a filtration system, and it was approved by EPA and the state. That was one thing on wetlands that comes to mind, but Seneca has now been closed, so it's no longer a technique that we use.

My biggest effort was quantifying to see what we had to manage, and we went through considerable effort to do that.

MOORHUS: Was there much sympathy toward the wetlands on behalf of the Army?

WALKER: Well, it varied from place to place. Someone sent me a picture of a tank that was mired down at the wetlands that said, "This is why you don't go out to the wetlands," [laughter]. I think it varied, and it varied by the leadership at the installation and also by what kind of influence the office of the Environmental Division, what rapport they had, and how aggressive they were in working with their commander.

Aberdeen Proving Ground (APG) has quite a lot of wetland, and it's protected, and they had worked hard to preserve the resources. Being right on the Chesapeake, it was a constant effort to work with the State, Department of the Interior, and Corps of Engineers. A constant concern for me was to make sure that APG did not have anything leaking into the Bay. During my whole tenure, I worried about contamination coming off Aberdeen Proving Ground and going into the Bay. I would go to meetings dealing with the protection of the Bay and always be concerned that some day they were going to find something that I didn't know about. I'd always reviewed that issue with Aberdeen Proving Ground and asked, "What are you doing to make sure you're protecting the Bay?" and they always assured me, "The monitoring is there, so we don't have anything adversely going into the Bay." I accepted that and left it at that. But it was always a constant worry, because they're right on the headwaters of the Chesapeake Bay, and there's a lot of enthusiasm to make sure that it's protected.

Environmental law enforcement

MOORHUS: I have a note from the Department of the Army annual historical summary that, in 1988, the Environmental Law Division was established within the Judge Advocate General [JAG] Corps.

WALKER: Yes.

MOORHUS: Were you involved with that?

WALKER: Yes. We were beginning a very aggressive tracking of laws, violations of laws, and notices of violations. It was difficult to maintain the focus of the attention on these laws. I can't remember who the Judge Ad-

vocate of the Army was that decided that we needed this, plus I think that Colonel Magness may have had some thoughts on it as well. The Secretariat was definitely thinking about it. The General Counsel had already assigned two or three people just to deal with my office on environmental law, and that's all they worked on.

We had two large lawsuits. The first one dealt with Redstone Arsenal, and it was a lawsuit with Olin Corporation. It was dumping of 900 tons of DDT [Dichlorodiphenyltrichloroethane] residue that eventually got into the Tennessee River.

MOORHUS: Yes, you talked about that. So, that was a case where the Environmental Law Division was working with you on this?

WALKER: Well, they had Environmental Law Division, but I think the Olin case was before the division started.

MOORHUS: I see.

WALKER: The next large case was when we sued Shell Oil Company for almost \$2 billion. When you bring a large lawsuit against a large corporation, they have many, many lawyers working the issue. Plus, we were being sued by the State of Colorado over Rocky Mountain Arsenal. And, we were threatened with lawsuits at Twin Cities Army Ammunition Plant in Minnesota.

Also, we were carefully keeping records of how many notices of violations our installations were getting from the different states. Then there was the constant advice you had to give commanders in the field on what constitutes an environmental violation and the liability that goes along, either for the Army or for the individuals. So we established the Division. I think it was established right before, let's see, it was '89.

No, it was established soon after we had the indictment of the three civilians at Aberdeen Proving Ground. One was an internationally recognized chemist and had been indicted for environmental violations. In fact, the allegation was that they had poured chemicals down the sump at the laboratory at Aberdeen. It was a famous case, the Aberdeen Three. It went on notice all through the DOD, because they were indicted. It almost bankrupted each one of them spending money on their defense, because the Army could not provide support for their defense.

Congress was very upset, particularly Congresswoman [Helen D.] Bentley from that area. She was most upset that the Army wouldn't defend them. So here was an internationally known chemist, who had developed the binary weapon system for the Army, who was indicted. Two of his assistants were indicted for the same charge, and they were chemists as well. They should have known this was not standard practice that they had been taught in their laboratory personnel [training].

I went to the Federal Court House in Baltimore and did the pleading before the Federal judge. I think it was 1989. I did the pleading before a Federal judge to keep them from going to prison. The reason why I remember it so well is I had had an accident at the Pentagon's athletic center, the POAC [Pentagon Officers Athletic Club]. I had torn my Achilles tendon, and my leg was in a cast up to my knee. I was on crutches, and I had to get up in the witness stand. I had a terrible time getting up into the chair. The bailiffs had to come and help me up.

I presented my pleading for the three individuals, because they were good citizens. They just had not given, as the judge said, serious attention to environmental laws, and that is a must in this country. But they were not the type of people that should go to prison. That's what he said after my pleading, that they shouldn't go. They were fined and given three years probation, and they were off. As we departed from the hearing, the lawyers said, "Well, the next time we have to get you on the stand, we're going to put your leg in a cast." That was kind of a humorous event. But, we were successful in keeping them from going to prison.

I was mixed. I was mixed at whether you'd do something like that, because they had violated the environmental law, and one of my duties and efforts was to try to get compliance with environmental laws. But I weighed in on the side that they had done a lot for their country and that they were good citizens. They had just been caught at something that they shouldn't have done, and so I went up and did the pleading to keep them from going to prison. It was a difficult choice to make, but I still think it was the right thing to do. I think there may have been one or two arrests of Army personnel after that but not anything as serious as they had done.

A person up at Fort Drum was arrested, because he dumped some drums in one of the areas of the lakes at Fort Drum, some drums of paint. Those were actually recovered and removed, and he was fined but not jailed. Then we had some arrests down at Fort Bragg [North Carolina] because

they had done damage to the habitat of the red-cockaded woodpecker. I think those were the only arrests, and they were fined and not put in prison. But that shock wave went throughout the Army saying, "You've got to take this seriously, or we're going to have problems."

All those things led up to the fact of having an Environmental Law Division dedicated to working all the issues and making sure commanders are informed. Further, it supports the JAGs of the commanders of installations on knowing what the laws are and how they're applied.

MOORHUS: Are these felony crimes that were investigated by the Army CID [Criminal Investigation Division]?

WALKER: Yes, I guess. The CID investigated the situation at Aberdeen, and then they turned it over to the FBI. It was the FBI, with the U.S. Attorney in that area, bringing the indictments against them. This is a serious matter. You certainly have to be careful in trying to do the right thing in managing your resources. I went through the hearings of trying to get the establishment of the Superfund, CERCLA [Comprehensive Environmental Response and Liability Act]. I can't remember the acronym.

MOORHUS: I've got it.

WALKER: Yes, CERCLA. But, for people living in those areas that were adversely infected by really chemically contaminated water, how they had lost loved ones with different types of cancer, and Love Canal, you have to be sympathetic to their situation. It makes you feel that you have to pay attention to the way we manage our resources, because that just can't be tolerated. I have been on the Hill and heard those families coming in and describing the conditions. One person said that their water had turned so incredibly dark brown that they couldn't stand it. Then the county came out and condemned their well, of course, and they were the same ones that had authorized the landfill near them. Anyway, I have heard that kind of testimony.

We were there, and at that time Congress was trying to formulate how we were going about it. I hadn't been at the Army very long, because this was in the early 1980s, and Army was trying to formulate its approach to the problem. We had been spending a lot of money, that \$250 million that I calculated for the Army's environmental program, when we started. It was

mostly for water treatment. Later on, most of Army funding was going to hazardous waste management and cleanup.

National Defense Center for Environmental Excellence

MOORHUS: What is the National Defense Center for Environmental Excellence [NDCEE]?

WALKER: It was created in Johnstown, Pennsylvania, as a congressional initiative agreed to by the Secretary of Defense. When the Army was given the responsibility to manage it and get it started, I had it focused on pollution prevention in industrial activities. Since there were so many in the Army and particularly in the OSD that were opposed to NDCEE, I wanted it to have a specific purpose. Also, it was to work for all services on that type of research and testing.

There were also others that wanted to have NDCEE to take on every DOD environmental concern. But I said, “No, you really have to have a well-defined mission, and you have to make sure that you produce products from the organization.” We got it under way for a time, and then I think it was about the fourth or fifth year of its operation that I finally retired. But I did do what Congress wanted. I got it started, and it was also what the Secretary of Defense and the Army Secretary wanted to do, over the objections of many in the Army. Initially, when I used to chair meetings on establishing NDCEE, all they would say is, “How can we kill this thing?” My position remained very clear. “You’re not going to kill it, because the Secretary wants it, and the Secretary of Defense wants it because it’s a very strong congressman he is dealing with. It’s a congressional initiative, and they want it done. So we’re going to do it.”

It came up with a lot of new things in coatings and ways to deal with pollution prevention in our ammo plants, depots, and arsenals. One example of what they did when they studied a problem out at — I think it was at one of the plants in California. They had a terrible air emission problem in one of the process areas. They came in, studied it, looked at it very carefully and said, “Well, all you need to do is put more water in the vats,” and somehow, that cut down on the emission.

I can’t remember what it was, but it seemed like there was something else to the technique. No, it was just adding more water to the vat, and that somehow the dilution reduced the emissions. It was so simple and so low

cost that it impressed me, and I think that the installation even got some kind of an award for that.

Also, NDCEE worked with the plant for small arm ammunitions at Lake City [Lake City Army Ammunition Plant, Independence, Missouri] on different paints that they could put on the ammo that would not be problems with hazardous materials later on. They were able to do things of that nature. Some of the services picked those up, and they were able to show this latest weapons system that came out had far fewer hazardous materials involved than what had previously been done under the old regime of developing weapons systems.

There were some other examples, but I think now that they've allowed them to broaden their mission from what I had approved. But, I really thought that with limits they would do the most good. They were co-located with a Navy center for metals and also co-located with an EPA Toxic and Hazardous Materials Analysis [Center]. So I thought the combination of the three areas, and the way they could collaborate on work, would probably do much for DOD.

We had the Army Environmental Center. The Air Force has their AFCEE, which is the Air Force Center for Environmental Excellence. Then Navy has an environmental center at Port Hueneme in California. To avoid overlap and duplication, it was my notion that we could stay with pollution prevention in industrial activities and be complimentary instead of being competitive.

The industrial activities of all services needed a center that they could go to and work their kind of problems. The Army Environmental Center looked at environmental compliance on troop installations and industrial installations as well as looking at the focus on environmental cleanup. It also did some work, but not so much on pollution prevention, even though I did have them do some work on pollution prevention of a different nature than just purely the industrial activities. We needed specialists and chemists to work on industrial processes.

Staff and resources

MOORHUS: We have talked about the people that you worked with, the colonels and then General Brown on the Army staff, but what kind of a staff did you have?

WALKER: I had a very small, specialized staff, and I tried to keep it small. I know it's larger now, but I had about 10 employees. I had an environmental staff, a safety staff, and an occupational health staff.

MOORHUS: How many people on the environmental staff worked for you?

WALKER: Well, it was about three — I was trying to think. It was about three or four. I had a person that dealt with NEPA on the environmental impact statements, pollution prevention, and natural resource conservation. I had a specialist that dealt with just contamination cleanup and installation restoration, including FUDS and BRAC. I had a specialist that dealt with compliance, who was very knowledgeable of RCRA, the Clean Water, and Clean Air Acts. So, as issues came up, you could focus the staff and give specific tasks to each individual.

MOORHUS: Did you feel that you had enough resources?

WALKER: Yes, I did. I was unlike a lot of people. It had been very tempting, and I watched the Secretary of Defense's office build and build. It was very tempting to do that, and I probably had support to do that, but I kept it very small so it wouldn't be a target for downsizing.

Our reliance was working with the Army staff, and we were supported. Also, we had the Army Environmental Center as support. You also have the Army Safety Center as support. When I started the program, it was the Army Environmental Hygiene Agency, and that's part of the technical support for occupational health. Now, that is CHPPM [USACHPPM — U.S. Army Center for Health Promotion and Preventive Medicine].

I never did like the name, but I got so tired, when it was the Environmental Hygiene Agency, because every time I would take a political appointee up there, they would say, "Why don't you merge the two? You have the Army Environmental Center, and you have the Army Environmental Hygiene Center. Why don't you merge the two?" Well, the medical side wanted their capability to go out and do the water quality and air quality assessments where people work. The Army Environmental Center focused on different aspects of the environmental program.

But the medical side and then the safety side — actually, all three programs intersect, because safety gets involved in dealing with hazardous

waste management, unexploded ordnance when you're cleaning that up. Then the occupational health side intersects as well. You have three circles, and there's one area where they all come together. So I kept this cohesive group working at my staff level but with the notion that they were going to get a lot of support from the Army staff. That's what we did, and we were able to keep the numbers down by treating it that way.

People were worried that that wasn't large enough, but I was one for always having a small staff and not a huge staff, particularly when we had resources available we could tap. It forced you to work with them all the time, because a lot of times, you were overwhelmed if you didn't. It was just amazing. I was very fortunate to have had good, solid people in those areas, and I was quite pleased with that.

MOORHUS: Is there anybody specifically you'd like to mention?

WALKER: Well, the one person that really stood out on the staff — he's still there — is Rick Newsom, who handled installation restoration (DERA, FUDS, and BRAC cleanup). He had a horrendous task with all the problems we had. Rick had been at AMC [Army Materiel Command] and also had spent some time with the Corps of Engineers and was very well respected. He ran the Formerly Used [Defense] Sites program, which the Corps managed. With his experience, he could get the Corps working very quickly on issues, so that was effective.

I was trying to think. In the environmental [area], I had very many officers that were outstanding. Colonel Mike Sisk was an outstanding officer in the environment, and he focused on compliance. His background was with the Medical Corps, and he worked very closely with the Army Environmental Center and the CHPPM.

Then I had two people in the safety program that were very outstanding. I was always blessed with having very strong individuals. I always liked to have the right person and not more people, with that understanding, you find a capable person to do that. We brought Lydia Sanchez in to fill in with compliance. Now, she's on the Defense Explosives Safety Board. She's an environmentalist working with all the standards dealing with explosive safety. I feel like there's somebody else there.

Summary of impacts and accomplishments

MOORHUS: Do you think that the Army program and the way the Army approached programs or the policies that developed had an impact on the larger American program in the environment?

WALKER: Yes. There are several examples of that. One is that we had a structure and a methodology for approaching contamination cleanup, and actually, EPA came over and studied our approach. They modified it when they were starting their own program in compliance with the new CERCLA regulations. So Army was a forerunner in that.

Probably the Army did some of the better work on the environmental impact statements with good examples of public involvement and documentation of the concerns. Actually, most of Army's natural resource conservation programs were modeled pretty much after and working very closely with the Department of the Interior Fish and Wildlife Service. But I think that Army had another influence.

I started a program called — it was an environmental personnel exchange with EPA. We would place Army officers, who were in their development assignments in different EPA offices, mostly regional offices. Actually, after they'd been there a year, I'd usually get letters from the EPA region wanting them to extend. I would either bring someone over from EPA to have on my staff or to serve on the Army staff. So early on, we worked and finally did get the Army staff, with the help of Assistant Secretary of Manpower and Reserve Affairs, to support the program.

The individual that went to USAREUR from EPA actually extended so many times that a lot of times when I would visit Europe, he would be the acting head of the environmental program for the command. He was so respected by the Army that his EPA background didn't hurt his chance of serving as acting program manager. It's too long ago; I don't remember his name. But that program, I think, helped the Department of Defense, the Army, and EPA as well, in making sure that we were not as bad as everyone thought. We were not trying to hide things and not being insensitive to the environmental concerns. I did that, and I don't know if that's still being continued. I think it fell by the wayside in all the cuts and everything, but that was one attempt to have influence over the larger picture of the environmental concerns throughout the Federal government.

We participated in OSD meetings which were kind of established by George Marienthal. All services would meet at least once a month and go over service issues. Then we had to brief OSD, under George's program, twice a year on the health and the vitality of our ESOH programs. This caused you to focus on the program when you had to go up to the Secretary of Defense's office and brief your programs. It also set the stage for what you were going to include in your testimony going to the Hill to defend your program.

My approach to testimony is I put as many accomplishments as I possibly could squeeze into my testimony, and then I would tell them what our plans were for the future. Usually, there was going to be one or two members who were not happy with the program, and you're going to hear it. But my notion, as a civil servant, was to go up and tell them what you'd done with the appropriated money that Congress had given Army. "This is what we accomplished. This is what we plan to do with the president's budget out into the out years." That was kind of my style in dealing with Congress, knowing that how you work with Congress is one of the other facets that you have to think about when you direct a Federal program.

It used to be, when I was with the Department of the Interior and the Water Resources Council, you had another factor that you had to know. You had to work very closely with OMB, the Office of Management and Budget. But when I came to the Army, the working relationship between the Office of Management and Budget and the military services was entirely different. DOD formulates its budget, and they pretty much work out their disagreements and agreements in partnership.

It's a rather transparent situation, whereas over in the civilian services, it is very contentious when you have to go over and deal with OMB and the examiners. In November they give you a pass-back, and you have a short time to respond to the pass-back, and then go over and plead with them to not cut your program as badly as what they'd done. But you never had to do that in the Army. In the Army it was just a matter of going up and defending the program on the Hill consistent with the president's budgets and the administration's priorities.

MOORHUS: You said earlier in the interview, a couple of sessions ago, that you wish you had done more about pollution prevention.

WALKER: Yes.

MOORHUS: But is there any decision that you made or anything that you did that you would do over, that you regret, or that you would revoke if you could at this point?

WALKER: No, I think that when I formulated the environmental strategy, which emerged from several ideas — it wasn't my idea totally, but it emerged — we put equal emphasis on the four thrust areas, the Four Pillars as they're called — compliance, cleanup, pollution prevention and conservation. The small resource input into pollution prevention was very low compared to what we were spending on compliance and contamination cleanup. That is something that I kind of regret that I didn't really push harder, because we had the opportunity to meet with the Army staff during budget times to put in a plea.

But, I guess maybe the concern was that the severe penalties were for violations and compliance and that's where the liability was. So you had a tendency, and that always got your attention, to deal with personal liability for our commanders in the field. I could just never bring myself to fight as hard for the pollution prevention resources as I did for compliance and cleanup funds. I would only complain about it and show on graphs how little we were spending on pollution prevention. It wasn't that I tried to ignore it. I just didn't put the effort into that program. We called those the go-to-jail priorities on compliance and the restoration program.

I guess I had a really deep concern over contamination getting into somebody's water supplies from our efforts and causing ill effects or immediate health effects from our activities. If you have a violation in your compliance, it's usually that you've done something fairly serious. Or if it's in contamination, you needed to get out there and get the drinking water cleaned up. That has a tendency to bother you. So yes, I could have done more probably, and I could have been more aggressive in that area.

But, you have to set your priorities and do the best you can in areas that you cannot. That's why I probably mentioned somewhere about the slow season around Christmas time, when the staffs were very low, I would sit down and write out my next year's goals and priorities and then just put them in the top drawer of my desk. Then every once in awhile, I would just pull those out and take a look at them. Am I on track or not. That is a very personal thing. I used that as a guide, because you had so many distractions, and you'd always have downers and up times. You had to keep fo-

cused on some things, so I just reminded myself of the direction I was going.

7 Retirement from Public Service

A “close call”

MOORHUS: Tell me about your decision to leave.

WALKER: Well, it was mainly for health reasons. After my first heart attack in 1990, on July 17, I made some adjustments, thinking that I needed to change my lifestyle a little bit but didn't really take it very seriously. It came around to July of 1994, and I had a very serious heart attack.

MOORHUS: July's not a good month for you.

WALKER: No. Let's see, the first time it was the 17th, and the next time, it was the first day of July. When you come to [consciousness] in the emergency room, and you find your chest black and blue from defibrillator marks, you think that maybe it was a close call.

MOORHUS: Time to change.

WALKER: I continued on. I recovered, with a month of recovery, and then went back to work. This was all the way through the rest of '94. I decided in '95 that it was a point in my life where I had to cut back. I couldn't keep the pace, and I just didn't think that was fair to the program.

I had a long talk with the Assistant Secretary, Mike Walker, and I said, “I don't think it's fair. I can't keep the pace, so I think I'm going to retire,” and he said, “You take only part time. Just come in when you can,” so I said, “Well, I'll try it for a little while.” By mid '95, I said, “This is not fair. Everyone else comes in here and works long hours, and I can't do that any longer. I'm improving, but I just don't know what's going to happen.”

I was making headway. I had gone through the rehab program at our local hospital. After that I started working out at the Pentagon. A physician from Walter Reed [Army Medical Center, Washington, D.C.] came over, and several of us were going down to POAC three times a week and working out. I'd changed to a different lifestyle, total vegetarian, exercise, and more rest. I actually was following a book by Dr. Dean Ornish from California, and it's called *Reversing Heart Disease*. So I told Mr. Walker I would try this and stay, but then I decided I had to go.

The first day of July, I went on retirement, but it was sick leave to the end of the year. I retired finally on January 1, 1996. When I left the Pentagon, I said, "I have to step out and go. I hate to do that," because 16 years of my life had been there. I wanted to do more in performance-based contracting in the environmental arena, which I'd gotten started a little bit. I wanted to go further in some of the other pursuits that we had going, but it was time to bow out, and I did that, so the decision was made.

Final reflections on serving the Army

WALKER (cont'd): I miss the Army. It's a great institution. In fact, an example of this is that it was always borne out to me that, in spite of everyone else thinking internally that the Army is not well managed, and they have a lot of problems and everything, it's so much better managed than the State Department and the Interior Department and other civilian departments. OMB used to rate the military offices as the best to work with, and Army is high in management, and thank goodness that is the case. Then OMB thought the Department of Agriculture was the next best managed. Then I think it was the Department of the Interior, and since they had so many different services, ones that had such competition among each service that on the lower rung it was difficult managing anything.

I was pleased with the Army. Like I say, I think the last five years I was at the very highest level of the civil servants as an SES-6, and I'd gotten two presidential awards, so it was very hard to leave. But I had to reflect on the situation, that I'd had a good career with the Federal service and that I had the great fortune of having the benefit of a lot of people giving me help, because you don't accomplish very much without help. It always seemed like the right person would always come out with the right idea. You'd adopt that and go on.

It was like the example of Tom Magness coming along at the right time, and he had the right ideas. I furthered his ideas, so it wasn't me totally. The other thing, too, was the people that worked for me. Today, I had a great experience of going over there and visiting a young man, who had worked for me as a first lieutenant and now is the number two person in the Department of Energy. The other person who worked for me and who had helped early on with good ideas and everything is Mr. Jim Haynes, who is the General Counsel for the Secretary of Defense. It's on and on, people who stepped up at the right time and offered the right solutions.

I think that one of the great things during my career was the help that I got from other people, not only above, but from below. It was a great career. I believe I could have done better than I did, but I was pleased, and my wife and I have always lived very comfortably. I never made any great sums of money, but there is something more to Federal civil service than just being paid. You do receive financial resources from it, but serving is much more than just those kinds of financial rewards. So you have to look at that, and you look back on the numbers of people, even, I would say, Thai and Lao-tian people that have helped, and people in Europe that I worked with, the NATO people.

Even when I went back and I worked with the U.N. in Laos and Thailand, the technical director for the U.N. office that dealt with unexploded ordnance — after just working with him for about 30 minutes, it seemed like we had been working for many years together. It was a fit. Just everything fit together, and it went very well. In two months of working with him, it was like I had been there a lifetime. It was the same thing with the Thai team that I had over there. I would have taken on anything with them. The eleven Thais who stayed with me the five years, if we had continued our work over there, I would have held them together. Or if they had asked us to go to another country, I would have taken them into the country.

I had augmented the team when we went to Laos to do work with some Laotians, but I took my core Thai team when we went to Laos. It was that kind of experience — the people, the service, and the dedication to being able to serve your country — that has been very important to me. I owe a lot of people, but I hope I've helped some.

Post-retirement activities

MOORHUS: Oh, I think so. But obviously, your work life did not end. You just went into yet a different career after you left the Army.

WALKER: Yes.

MOORHUS: I'd like you to talk about that and sort of comment, as you go through, on what you've been doing with some of the things that you took with you from the Army, things that had an impact on what you were doing.

WALKER: Right, yes. I essentially do things that I was involved with in the Army. I've stayed working in environmental issues here and there. I

work pretty much with the defense ammunition community, because I have an interest in the demilitarization and cleanup of unexploded ordnance, so I've stayed with that.

I've worked with the academic side a little, and I worked a short time with SAIC by helping them with some environmental impact statements. My job satisfaction wasn't quite there, so I moved from there to a little firm in Alexandria, but I also got associated with the University of Texas. Now, the contract moved from the University of Texas to Oklahoma. But, it was with the little firm in Alexandria that I was involved for a short time when we got our U.N. contract in Laos.

MOORHUS: Was that Bahr Incorporated, B-A-H-R?

WALKER: Yes, B-A-H-R. We got the first contract with the U.N. In fact, Bahr had to change its name to include "International" after that. It was because of my contract with the U.N. and working in Laos that they got their international experience, and I enjoyed that first.

Actually, I never thought we'd ever go back to the Far East. We did, and my wife went along with me both times. It was when I first arrived at Bahr. I don't know whether it's on the listing. I went to Panama on invitational travel orders from the U.S. Army Yuma Proving Ground. They had been asked to go there to visit the Tropical Testing Center, and they'd also been asked to look at the cleanup of the ranges in Panama before the turn-over of the Canal. So I went down and worked with them.

But I reflected back on this a little bit, when I got out. Had I been taking care of my health, I'd still probably have been with the Army, because soon after I retired, or about the time I retired, I was starting to feel better, and lo and behold, all the blockage cleared out of my heart, and I have never had any concern with that since that time.

But I still follow the regime. In fact, yesterday morning I went and worked out, Thursday night I'll work out, and Saturday morning I'll work out again. You do the exercise. You do the proper eating, and you get a little more rest than I used to in the days at the Pentagon. I think that that's one of the things that you have to do in balancing your life. The balancing that goes on during your career is balancing your physical health, taking care of that, then your work time, your family time, and your resting time. It has to be balanced, and I just didn't schedule my time better.

That's one of the things that bothered me most, when I reduced my work before retirement, because I did not want to be going there just a few hours a day, shortened work hours, and then have all the rest of them in there working such long hours. There was an old rule when I first started out that you tried to do everything you could in the eight hours, but when I got to the Pentagon, that was never the case.

Actually, I would get up, and I would be in the Pentagon by 6:30 in the morning, and then I would leave about 6:30 at night. Some of it was due to less traffic, but now, traffic is not that bad from here to get into the Pentagon. It was just my style. I always wanted to get in and go over things before the work day started and then get things lined up for the day. You should have been relying on your staff to do that, but it was just not my style. However, it should have been a little more so, because you think about your health and then take measures.

I knew that I had to. I just couldn't bring myself to realize it. You would go into denial. This would never happen to you. But I think that that's one of the things that needs doing. Then you have to have your sticking with the regime. I'm rather particular about making sure I get my exercise.

MOORHUS: Has your experience as a contractor led you to reflect differently on any of the things that you did while you were with the Army?

WALKER: I don't know. I don't really think that that has had much influence. I work on those things that I find interesting, and then there are some that I have actually said, no, that I'm not interesting in continuing with some things. I guess that's the option you have when you're retired and on the outside. You go after those and pursue those things you like.

I've been very cautious, though, about what I work on, because I don't want to have it, in any way, reflect on the current office there. It's Mr. Fatz's program now. It's not mine, and he's done a very good job of keeping it intact and keeping it going. So, I'm very sensitive about getting involved in anything that might reflect back on or something that might be competitive with what he's doing. That's why I steer off unexploded ordnance and things of that nature.

It's different working with Oklahoma State University. I probably mentioned maybe one of the areas. One of the areas that they're working on is a way to neutralize TNT waste, the red water waste. I don't know. Maybe I

mentioned that before. That used to be a tremendous problem for the Army. In fact, it caused TNT production to move out of this country because of managing the waste.

Well, Oklahoma State has now developed a technology that uses sunlight and a catalyst to neutralize the waste, and it's a very low-cost technology and the type of thing that I like to be working on. We just, here about a month ago, got a quantity of red water. It's hard to find now that we don't have the production here. Quantities of red water have been transported to Oklahoma State University laboratories.

They're starting the analysis to prove out its applications on a larger scale. They've proved the technology out on small quantities, but they need larger quantities to perfect the proof of principle. So within the next 30 days, I hope it will be successful. We've been down at Radford Army Ammunition Plant here in Virginia four or five months ago working with them. If this proves out, we can get TNT production back into this country.*

MOORHUS: Who is funding that research?

WALKER: Oklahoma State University and the Defense Ammunition Center. The other thing is that, about three years ago, they brought to my attention some technology from Sweden that is very effective in sustainable ranges in dealing with, where it's possible, capturing the lead rounds on military firing ranges. It's been installed on 104 ranges in Sweden, 37 in Denmark and 4 in Norway. It's made with all recycled materials. It prevents any new contamination from lead on ranges. It's actually very preventive.

It acts as a container. It catches the bullets in a bed of rubber granules from used tires. It's very easy. After you shoot about 100,000 rounds into this bullet catcher, you can retrieve the lead and sell it in the market as recycled lead. And if we change to a tungsten round, which they are talking about as being the green round — tungsten is so much more valuable than lead that it pays for itself just as a catchment facility.

We have one that's just been installed down at Fort A.P. Hill. It was brought over here from Sweden and installed. The testing has just been

* Walker note: On the 17 February 2005 the tests were a complete success, and on the 24 March 2005, Army and congressional staff members were briefed.

completed, and it's proven. In fact, the installation signed to keep it. It went in as a test. If they didn't like it and didn't want it, we would remove it. But that has been successfully tested, and the Fort took over custody of the bullet catcher. That's why last summer I went to Sweden to observe the ranges that are fully developed with this technology. Everyone laughs about how I dabble around in strange things.

Let's see, the summer before last — time flies — West Virginia had an area where I think it was something like eight million rounds of obsolete small arms had been sold to a company to redo and resell them to the more modern small arms. The president of the company discovered it was better to sell the ammo to drug lords in Venezuela and Colombia. So the FBI moved in, and he disappeared. No one knows whatever happened to him.

The Army was called in to bring in a plasma arc facility to destroy all this ammunition. I went down, a year ago last November, and conducted a town meeting near the little town where we were going to move in the plasma arc and destroy the ammunition. We considered all the safety and the environmental impacts. An impact statement had been developed, and we needed the town meeting to comply with the state and Federal regulations, and the State of West Virginia was there as well.

It was installed in about May of '04, and I went down for the test runs. I think there are six campaigns to destroy the ammunition, and now they're on their second campaign to do that. I do strange things like that, going out and getting involved in the state. Word got through to the ammo community, and I had worked with the State of West Virginia before. They wanted me to come down and work with them so that the community wouldn't be upset and there would be some calmness in the community. We had to destroy it. We got down there and found moving it out was not the answer, so they wanted to destroy it onsite. Now that is happening.

MOORHUS: It sounds like an interesting array, and it also sounds like you have more control of your time than you used to have.

WALKER: Yes, right. You can pick and choose and select those things. Now, some people laugh at that. "Why would you want to go out there?" It's near Bluefield in the southern part of West Virginia in a very rural area. "Why would you want to go out there and work that?" I don't mind taking on those things. It's quite a challenge, and I like to do it. They had to work with the state to make sure that the state would accept the safety

plan. I went down twice, and we reviewed the safety plan with the state, and they finally agreed with it.

I've been asked to chair the sessions with the state, the Federal EPA, the Army, and the company that stepped in and took over after the one company departed. It also had interest from Senator [Robert] Byrd's office from West Virginia. So, you never know what you're going to be called on to do. They tell me that another assignment is coming up dealing with Hawthorne, Nevada, with the same plasma arc technology that is going to be used to destroy some specialized obscuring smokes and dyes in canisters there. I will be called on to go there. But I haven't been called yet.

I did mention the fact that I reviewed the situation of the destruction of the chemical ammunition in China that the Japanese are doing, so I've gone through that. I've just finished my assignment in late December, when I went out for two days. After the last interview we had, I went out to California, and I was actually out there three days reviewing their material. But like I say, I do many things, and I have not only that pursuit. As you can see across the street over at our church, since 1998 I have directed a \$5 million construction project, and we just passed our occupancy inspection yesterday.

MOORHUS: Congratulations.

WALKER: It's enough to keep me busy.

MOORHUS: It sounds like it.

WALKER: Yes.

MOORHUS: Well, thank you for taking the time to do this and making your contribution to history.

WALKER: Very good. I hope that it all makes sense.

MOORHUS: It does. Thank you.

[End of interview]

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