
An Interview with

BOB

LOUX

*An Oral History produced by
Robert D. McCracken*

Yucca Mountain Series

Nye County Town History Project
Nye County, Nevada

Tonopah
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PREFACE

The Nye County Town History Project (NCTHP) engages in interviewing people who can provide firsthand descriptions of the individuals, events, and places that give history its substance. The products of this research are the recordings of the interviews and their transcriptions.

In themselves, oral history interviews are *not* history. However, they often contain valuable primary source material, as useful in the process of historiography as the written sources to which historians have customarily turned. Verifying the accuracy of all of the statements made in the course of an interview would require more time and money than the NCTHP's operating budget permits. The program can vouch that the statements were made, but it cannot attest that they are free of error. Accordingly, oral histories should be read with the same prudence that the reader exercises when consulting government records, newspaper accounts, diaries, and other sources of historical information.

It is the policy of the NCTHP to produce transcripts that are as close to verbatim as possible, but some alteration of the text is generally both unavoidable and desirable. When human speech is captured in print the result can be a morass of tangled syntax, false starts, and incomplete sentences, sometimes verging on incoherence. The type font contains no symbols for the physical gestures and the diverse vocal modulations that are integral parts of communication through speech. Experience shows that totally verbatim transcripts are often largely unreadable and therefore a waste of the resources expended in their production.

While keeping alterations to a minimum the NCTHP will, in preparing a text:

- a. generally delete false starts, redundancies and the *uhs*, *ahs* and other noises with which speech is often sprinkled;
- b. occasionally compress language that would be confusing to the reader in unaltered form;

- c. rarely shift a portion of a transcript to place it in its proper context;
- d. enclose in [brackets] explanatory information or words that were not uttered but have been added to render the text intelligible; and
- e. make every effort to correctly spell the names of all individuals and places, recognizing that an occasional word may be misspelled because no authoritative source on its correct spelling was found.

ACKNOWLEDGMENTS

As project director, I would like to express my deep appreciation to those who participated in the Nye County Town History Project (NCTHP). It was an honor and a privilege to have the opportunity to obtain oral histories from so many wonderful individuals. I was welcomed into many homes—in many cases as a stranger—and was allowed to share in the recollection of local history. In a number of cases I had the opportunity to interview Nye County residents whom I have long known and admired; these experiences were especially gratifying. I thank the residents throughout Nye County and Nevada—too numerous to mention by name—who provided assistance, information, and photographs. They helped make the successful completion of this project possible.

Appreciation goes to Chairman Joe S. Garcia, Jr., Robert N. “Bobby” Revert, and Patricia S. Mankins, the Nye County commissioners who initiated this project in 1987. Subsequently, Commissioners Richard L. Carver, Dave Hannigan, and Barbara J. Raper provided support. In this current round of interviews, Nye County Commissioners Butch Borasky, Lorinda A. Wichman, Joni Eastley, Gary Hollis, Fely Quitevis, and Dan Schinhofen provided unyielding support. Stephen T. Bradhurst, Jr., planning consultant for Nye County, gave enthusiastic support and advocacy of the program within Nye County in its first years. More recently, Darrell Lacy, Director, Nye County Nuclear Waste Repository Project Office, gave his strong support. The United States Department of Energy, through Mr. Lacy’s office, provided funds for subsequent rounds of interviews. Thanks are extended to Commissioners Eastley and Hollis and to Mr. Lacy for their input regarding the conduct of this research and for serving as a sounding board when methodological problems were worked out. These interviews would never have become a reality without the enthusiastic support of the Nye County commissioners and Mr. Lacy.

Jean Charney served as editor and administrative assistant throughout the project; her services have been indispensable. Valerie Brown, Jean Charney, Robert B. Clark, Anna Lee Halsig, Debra Ann MacEachen, Lynn E. Riedesel, and Marcella Wilkinson transcribed a number of interviews, as did the staff of Pioneer Transcription Services in Penn Valley, California. Julie Lancaster and Suzy McCoy provided project coordination. Proofreading, editing, and indexing were provided at various times by Marilyn Anderson, Joni Eastley, Michael Haldeman, Julie Lancaster, Teri Jurgens Lefever, and Darlene Morse. Joni Eastley proofed most the manuscripts and often double-checked, as accurately as possible, the spelling of people's names and the names of their children and other relatives. Jeanne Sharp Howerton provided digital services and consultation. Much-deserved thanks are extended to all these persons.

All material for the NCTHP was prepared with the support of the Nye County Nuclear Waste Repository Office, funded by the U.S. Department of Energy. However, any opinions, findings, conclusions, or recommendations expressed herein are those of the author and the interviewees and do not necessarily reflect the views of Nye County or the U.S. DOE.

—Robert D. McCracken
2013

INTRODUCTION

Historians generally consider the year 1890 as the close of the American frontier. By then, most of the western United States had been settled, ranches and farms developed, communities established, and roads and railroads constructed. The mining boomtowns, based on the lure of overnight riches from newly discovered mineral deposits, were but a memory.

Nevada was granted statehood in 1864. But examination of any map of the state from the late 1800s shows that, although most of the state had been mapped and its geographical features named, a vast region—stretching from Belmont south to the Las Vegas meadows, comprising most of Nye County—remained largely unsettled and unmapped. In 1890, most of southcentral Nevada remained very much a frontier, and it continued to be so for at least another twenty years.

The spectacular mining booms at Tonopah (1900), Goldfield (1902), Rhyolite (1904), Manhattan (1905), and Round Mountain (1906) represent the last major flowering of what might be called the Old West in the United States. Consequently, southcentral Nevada, notably Nye County, remains close to the American frontier; closer, perhaps, than any other region of the American West. In a real sense, a significant part of the frontier can still be found in southcentral Nevada. It exists in the attitudes, values, lifestyles, and memories of area residents. The frontier-like character of the area also is visible in the relatively undisturbed quality of the natural environment.

Aware of Nye County's close ties to our nation's frontier past, and recognizing that few written sources on local history are available, especially after about 1920, the Nye County Commissioners initiated the Nye County Town History Project (NCTHP) in 1987. The NCTHP represents an effort to systematically collect and preserve information

on the history of Nye County. The centerpiece of the NCTHP is a large set of interviews conducted with individuals who had knowledge of local history. Each interview was recorded, transcribed, and then edited lightly to preserve the language and speech patterns of those interviewed. All oral history interviews have been printed on acid-free paper and bound and archived in Nye County libraries, Special Collections in the Lied Library at the University of Nevada at Las Vegas, and at other archival sites located throughout Nevada. The interviews vary in length and detail, but together they form a never-before-available composite picture of each community's life and development. The collection of interviews for each community can be compared to a bouquet: Each flower in the bouquet is unique—some are large, others are small—yet each adds to the total image. In sum, the interviews provide a composite view of community and county history, revealing the flow of life and events for a part of Nevada that has heretofore been largely neglected by historians.

Collection of the oral histories has been accompanied by the assembling of a set of photographs depicting each community's history. These pictures have been obtained from participants in the oral history interviews and other present and past Nye County residents. In all, more than 700 photos have been collected and carefully identified. Complete sets of the photographs have been archived along with the oral histories.

On the basis of the oral histories as well as existing written sources, histories have been prepared for the major communities in Nye County. These histories have been published by Nye County Press, the county's publishing department. All the oral histories, as well as the community histories, are available on the Internet.

The Nye County Board of County Commissioners, while motivated by the study of history for history's sake, initiated the NCTHP in 1987 principally to collect

information on the origin, history, traditions and quality of life of Nye County communities that would be impacted should the nation's first high-level nuclear waste repository be constructed deep inside Yucca Mountain on federal land in southcentral Nye County. Understanding such impacts would aid in their mitigation. Moreover, if the repository were built, it would remain a source of public interest for a very long time and future generations would likely want to know more about the people who once resided in the area. If the site should be found unsuitable and the repository never constructed, then materials compiled by the NCTHP would nevertheless be available for the use and enjoyment of future generations.

In 2010 the Nye County Commissioners and Darrell Lacy, Director, Nye County Nuclear Waste Repository Office, approved funding for collection of a round of oral histories from individuals who had played important roles in the U.S. Department of Energy's effort to assess the suitability of Yucca Mountain as a site for permanent storage of the nation's high-level nuclear waste. (The term high-level nuclear "waste" is very much a misnomer. The vast majority of the energy originally present in the nuclear fuel remains when the spent fuel—i.e., waste—is removed from the reactor. The spent fuel needs only to be reprocessed in order to make the remaining energy available for reuse. The proper term is thus not nuclear waste, but "spent nuclear fuel.")

The search for a permanent storage site for spent nuclear fuel was authorized by the Nuclear Waste Policy Act passed by Congress in 1982, as amended in 1987. Initially, several potential sites for construction of a permanent repository were considered; the 1987 legislation narrowed the suitability search to one site, Yucca Mountain.

Over the years, several thousand scientists and engineers participated in the study of Yucca Mountain's suitability for permanent storage of spent nuclear fuel, with several

billion dollars expended on the effort. In all that research, nothing was found that would disqualify Yucca Mountain as a safe permanent storage site. Then, in 2008, in a step prescribed by the 1982 and 1987 legislation and based on the research findings, the U.S. Department of Energy applied to the Nuclear Regulatory Commission (NRC) for authorization to begin construction and move forward with development of a permanent repository at Yucca Mountain. The NRC was then required by law to evaluate the DOE's application and vote up or down on it—build it or forget it. That was and remains the law!

Beginning in 1983, the issue of possible construction of a permanent repository at Yucca Mountain gradually became controversial among many in Nevada. A number of high-profile politicians expressed strong opposition to the idea of storing spent fuel at Yucca Mountain from the beginning, regardless of the site's technical suitability. Several increased their political power through their outspoken opposition, essentially doing everything legally possible to block the effort. Public opinion in Las Vegas about Yucca Mountain, which was rather mild and mixed in the beginning, gradually became somewhat negative over the years, especially after 1987, when Yucca Mountain was singled out as the only candidate. Yet at the same time, public opinion in rural Nevada began and remained accepting of the program, especially in counties located closer to Yucca Mountain itself.

Nevada Congressman Harry Reid rode his strong outspoken opposition to Yucca Mountain to election to three terms in the U.S. Senate. In January 2007, he was chosen Senate Majority Leader by the majority Democrats. Newly elected President Barak Obama was highly dependent on Senator Reid for passage of his own legislative agenda. In order to mollify Senator Reid, all funding for any further work on Yucca Mountain

was killed and the Nuclear Regulatory Commission (NRC), under Chairman Gregory Jaczko's maneuvering, was prevented from voting up or down on the Department of Energy's application to move forward with development of the repository. Many believe that a vote by the NRC was prevented because approval by the NRC staff was likely. Thus, one man—in this case, Senator Reid—in effect played a pivotal role in overriding the legal process prescribed by law. The findings of more than two decades of carefully conducted research costing several billion dollars were casually set aside.

In the meantime, spent nuclear fuel continues to accumulate at temporary storage facilities located near nuclear reactors at more than 45 locations around the country, some near very large cities, including Chicago.

About the Yucca Mountain Interviews

Dr. Michael Voegele held numerous positions with DOE contractors in assessing Yucca Mountain's suitability for permanent storage of spent nuclear fuel from 1981 to 2009, and continued after that as a consultant to Nye County. Perhaps more than anyone, he has a comprehensive view of the more than three decades of research about the safety of Yucca Mountain. He personally knew many of the scientists and engineers involved in the effort, including what their work consisted of and how it all came together. Given such expertise, he played a key role in selecting the majority of individuals we interviewed on Yucca Mountain history. Dr. Voegele assisted in many of the interviews and was also interviewed by me at length. Together, these interviews provide a boots-on-the-ground perspective of the assessment process in evaluating Yucca Mountain's suitability as a permanent repository site. Individuals interviewed were Drs. Thomas Cotton, Russ Dyer, Ned Elkins, Don Vieth, Jean Younker, and Michael Voegele.

Two Nye County officials who played significant roles in the Yucca Mountain effort for Nye County over the years were interviewed. Steve Bradhurst was the first director of the county's nuclear waste office, serving from 1983 through 1993. He was interviewed twice, in 1991 and again in 2010. Gary Hollis served as a Nye County Commissioner from 2005 to 2012 and in effect functioned as the commission's point man on the Yucca Mountain project during his time in office. He also was employed on drilling efforts associated with the assessment at Yucca Mountain prior to being elected a commissioner.

As noted, the idea of permanently storing spent nuclear fuel at Yucca Mountain became a heated political topic in Nevada beginning in 1983. To be fair and to give as broad a perspective as possible, we also conducted oral histories with politically focused individuals who represented differing viewpoints on Yucca Mountain. Former Nevada U.S. Senator Chic Hecht was a strong supporter of Yucca Mountain from the outset; he was interviewed in 2004. Former Nevada Governor, subsequently U.S. Senator, Richard Bryan, a strong and vigorous opponent of Yucca Mountain from the beginning, was also interviewed. At the conclusion of that interview in 2011, although by then I was a strong proponent of Yucca Mountain, Senator Bryan told me I "had been very fair." As a professional anthropologist, I take a lot of pride in his compliment. Bob Loux from almost the outset of the Yucca Mountain effort in 1983 functioned as the state of Nevada's anti-Yucca Mountain point man in his position as director of the state of Nevada Agency for Nuclear Projects. His job, as he acknowledged in his oral history, was to do anything legally possible to prevent a Yucca Mountain repository from ever becoming a reality. As with Senator Bryan, the interview with Mr. Loux went well.

Unfortunately, U.S. Senator Harry Reid, despite repeated requests, did not make himself available for an interview.

Three additional interviews were conducted outside this Yucca Mountain interviewing effort, though still using Yucca Mountain funds. These individuals played important roles in the Yucca Mountain assessment effort. Troy Wade previously worked for the Department of Energy; he was Assistant Secretary of Energy for Defense Programs in 1987–1988. He was interviewed as part of the NCTHP. Carl Gertz was Yucca Mountain Director from 1987 to 1993 and earlier worked for the DOE at the Idaho National Engineering Laboratory. Ed Mueller worked for a U.S. Department of Energy contractor as a liaison between the Yucca Mountain project office and counties impacted by Yucca Mountain located in Nevada and California. Both Mr. Gertz and Mr. Mueller were interviewed under the Esmeralda County History Project.

Together, these interviews comprise a body of valuable information obtained from individuals representing a variety of perspectives on this important effort in our nation's energy history. A credible history of Yucca Mountain cannot be written without incorporation of such variable knowledge and perspectives. If development of a permanent repository at Yucca Mountain moves forward, such information on how the site was evaluated and on the enormous amount of work involved in demonstrating its suitability will prove invaluable once construction begins. The same applies for selection of a second or third repository site, and for the efforts of other nations to construct repositories as well. If the Yucca Mountain effort never moves forward, these interviews still will be helpful in understanding the great effort that went into the evaluation of Yucca Mountain as a site for permanent storage of spent nuclear fuel. It unfortunately

also tells how a good part of the more than \$11 billion spent in evaluation was in large measure wasted, not for technical faults, but for political expediency.

Opinions expressed in this introduction and in the oral history interviews do not necessarily reflect the views of Nye or Esmeralda County officials.

These interviews have been organized into four volumes and published by Nye County Press, publishing imprint owned by Nye County, Nevada. A master index covering all four volumes is included.

—RDM
2013

INTRODUCTION BY MICHAEL VOEGELE

This series of interviews with Dr. Robert McCracken, undertaken as a part of the Nye County Town History Project, focused on the Yucca Mountain project. The Yucca Mountain project oral histories were developed as part of Nye County's efforts to record information related to the project as an ancillary part of the Yucca Mountain history exhibits in the Pahrump Valley Museum. The Nye County Commissioners believed that it was important to capture this historical information, as the Department of Energy had made every effort to disassemble the project and its records when the Obama Administration made the decision that the project was unworkable, and created the Blue Ribbon Commission on America's Nuclear Future to undertake a comprehensive review of policies for managing the back end of the nuclear fuel cycle, including all alternatives for the storage, processing, and disposal of civilian and defense used nuclear fuel and nuclear waste.

I worked with Dr. McCracken on the selection of the interviewees, and on several occasions participated as an interviewer. We consciously tried to identify interviewees who had been involved at the heart of the technical story of Yucca Mountain. Because funds were not unlimited, we needed to select carefully a relatively small number of interviewees. There were potential interviewees that we were not able to talk to because they had moved on to other venues following the Department of Energy's termination efforts and we simply were not able to accommodate schedule problems. We also tried to ensure a balance of perspectives on the project. Readers will find that the interviews tend to focus on a portion of the project's history or a major technical element of the project. In recognition of this, we decided that there ought to be an interview that attempted to

encompass as much of the project's history as possible, bearing in mind that the relevant history covers nearly 70 years.

The interview Dr. McCracken conducted with me is that document. While my tenure on the program was longer than most, I certainly do not have firsthand knowledge of the earlier parts of the program. I have, however, long studied the origins and early history of the project. My time on the high-level waste disposal program dates from the mid-1970s to the present, and I did not necessarily have significant involvement in everything talked about in that document. I am particularly indebted to Dr. Donald Vieth for the many discussions we had on the earlier parts of the program and found it fascinating how together we helped each other remember so much of the program's early history.

I felt it was important to offer the caveat that it would not surprise me to find that a reader remembered things differently than I did, or believed that I was mistaken in my recollections. I accept responsibility for any such errors; I can only say it has been a long time. It is also important to acknowledge the time so graciously accorded us by the interviewees. I suspect that some of them wish, as I do, that there had been references available to check some of our memories. I can only say thank you for trying to help us collect some important information.

I'd like to particularly thank Nye County Commissioners Gary Hollis and Joni Eastley for their enthusiastic and unwavering support for the interview project and the museum displays, and Dr. McCracken for his skill as an interviewer.

Michael D. Voegele
2013

This is Robert McCracken talking to Bob Loux at his home in Dayton, Nevada, September 28, 2010.

CHAPTER ONE

RM: Bob, could you state your name as it reads on your birth certificate?

BL: I'm Robert Richard Loux.

RM: And when and where were you born?

BL: I was born in Owatonna, Minnesota, which is in southern Minnesota—a small town south of the twin cities, below Rochester—September 22, 1949.

RM: And what is your father's name, and when and where was he born?

BL: He is Robert Raymond Loux. I'm the third. He was born in Hibbing, Minnesota, September 25, 1921.

RM: What was his occupation?

BL: He was a football coach. The Owatonna area had a small military academy called Pillsbury, and he was the football coach there. He had been football coach in junior colleges and prep schools in Minnesota prior to that. He had a degree in education from Bemidji State College in Bemidji, Minnesota, but he was primarily a football coach.

RM: And what was your mother's full name and when and where was she born?

BL: Her name was Gladys Lucille Hickerson. She was born in 1921 in Bemidji, Minnesota. Her birth date was May 22, '21. She went to school at Bemidji State College, which is a teacher's college. She didn't graduate, but primarily spent her time as a homemaker, as most women in those days did, although later on she had some part-time jobs in Boulder City at the credit union and at some clothing stores and things like that.

RM: Where did your folks make their first home together?

BL: In Owatonna, Minnesota. We moved from Minnesota to outside Denver,

Colorado. My dad got a job with Dow Chemical, which was running the Rocky Flats plant, and we lived outside Denver for a few years. Then in the mid-'50s, he got a job offer from Sandia National Lab in Albuquerque, so we moved there. He spent about half time between Sandia and Los Alamos, because at that point he became an AEC employee (at that time, DOE was AEC). He was with AEC (later it became the DOE) from 1955 until he retired in 1975 or '76.

RM: Did you live in New Mexico?

BL: Yes, we lived in Albuquerque for some years. Then in '62, as I recall, he got transferred to the Nevada Operations Office in Las Vegas and they bought a house and we lived in Boulder City. That's where my brothers and I grew up. I went to high school in Boulder City.

They lived there until my mom died about eight years ago, and my dad lived there for a couple of years by himself. Then he met a gal that we used to know in Albuquerque; she had gotten divorced from her husband. She lived in San Leandro, California, around Hayward and Oakland. Interestingly enough, I got a call from this lady and she said, "Is this that Bob Loux that used to live in Albuquerque?"

And I said, "Yes it is."

And she said, "Well, you might not remember me, my name's Gloria."

I said, "You know, I think you're really looking for my dad, who's . . ."

She said, "Oh, yes I am!"

So I hooked them up in Boulder City, and he began visiting her in California. And two and a half years ago, they got married. He married again at age 86. He's 89 now and he's doing very well. He's healthier than I am. In fact, we're going to go down and see him this weekend.

RM: How interesting. What part of the nuclear science work was he involved in?

BL: Primarily in the more administrative end—he managed the technical libraries and he was a contract manager. And he co-authored a book with a guy named Sam Goldstein called *Nuclear Detonations and Public Safety*. I have a copy.

RM: Did it deal with the problems of downwinders?

BL: I think primarily it was more related to managing devices and things internally, rather than being about downwinders.

RM: What stands out in your mind about growing up in Boulder City?

BL: It was a really homey little place, like a Midwestern town. They didn't allow gambling, and you couldn't buy liquor in Boulder City when we were growing up. Although we, as kids, found a way. But it was real small town stuff. Everybody knew everybody. I think we graduated 69 kids in our high school. I played all the sports, and it was because of football that I actually got a tuition waiver to go up to UNR and play football there. That's how I got up to northern Nevada.

RM: What position did you play?

BL: I was a quarterback.

RM: Really? Were you a quarterback on the UNR team?

BL: I didn't get quite that far. I played a couple years on the JV team. There was four or five games with other JVs, but primarily you were running the next week's team offense against their defense—and getting your butt kicked pretty well, most of the time. We kind of had a falling out after my sophomore year. In spring practice I didn't get to play very much. It got to be August before my junior year and I didn't show up at training camp. The coach called me and said, "What's up?"

I said, "Well, you're not playing me any. I'm just kind of feeling like I'm not

getting any attention.”

He made this statement: “Well, four or five injuries, you can be right up in there.”

I’m thinking, “Hey, thanks a lot. I don’t think I’ll be playing football, maybe,” and that was the end of my career. But in high school we won state championships two or three times and set a bunch of passing records and so forth.

RM: That’s impressive. When did you graduate from high school?

BL: In 1967.

RM: And then you went to UNR. Did you graduate from there?

BL: I did.

RM: What did you study?

BL: Primarily I was figuring out a way to get through college without the most work. It ended up being a degree in secondary education. And then to keep from having to work, I went back to graduate school and worked in school administration for about a year and a half. I realized, at that point, I really wasn’t into it so I never completed that degree.

Then I started working. I did a lot of construction work when I was in school—spent a lot of time building house foundations and pounding a lot of nails. There was a thing called the Community Action Agency, in the early ’70s, that was involved with poverty programs and some of them were aimed at weatherization of senior citizens’ houses. This group hired me because of my education and construction background.

We taught homeowners about how to weatherize or re-weatherize their houses and we built solar greenhouses on many of them. We built solar water heaters for them. I managed a crew of about 15 or 20 guys that were sent out with equipment and tools and helped seniors weatherize their houses, primarily, and do some of these other things.

RM: That was in . . . ?

BL: In Reno. Then the 1975 legislature created the Nevada Department of Energy, a state agency. At that point, in the Carter Administration, there were a lot of grants to states to form energy agencies for conservation, renewables, and that kind of thing.

The state department came into existence, I think, July 1, 1975. I had applied and spent some time trying to get involved, and they hired me in October of '76. Noel Clark was the former chairman of the Public Utilities Commission, and he was named as the director of the Nevada Department of Energy. He spent a lot of time with commercial property owners and warehousing, and traffic—how to drive so you use less gas. We did a couple of projects. We sped out a hydroelectric project for the town of Carson City, from the Marlette Reservoir up there. We installed, later on, a solar photovoltaic system in Hawthorne, up on Mount Grant, to run their cable TV system. And we worked on some oil shale projects out in Elko County.

RM: Is there oil shale in Elko? I didn't know that.

BL: Yes. Railroad Valley has some as well.

RM: Really? A lot?

BL: Not a real lot, they produce in the neighborhood of 300, or 400, or 500 barrels a year, as I recall.

RM: Are they doing it commercially, or . . . ?

BL: Yes. But they were pretty small operations. And we worked on a bunch of geothermal projects as well. I was involved in a lot of renewables and conventional resources and energy policy stuff. We laid out a complete geothermal heating system for the town of Hawthorne. The El Capitan Hotel owned a huge, very hot geothermal well outside of town. We had this thing costed out so that the county could pay back the

industrial bonds in four years. The project would include running pipelines to heat all the houses and commercial buildings in town. In the end, the county just didn't want to go for it so it never got built, but it was feasible and very cost effective.

RM: How hot was the water where it was coming out?

BL: I think it was pretty close to 290, something like that.

RM: Wow. And you could put that in pipes, and run it to people's houses?

BL: Right, with heat exchanges and all that kind of stuff.

RM: Did any of these energy efforts come to fruition?

BL: Well, the city of Hawthorne looked at it for a while and never built it, as a matter of fact. But all the stuff was there. We had the financing arranged through industrial development bonds, the whole deal. There just weren't a lot of risk-takers in those days.

And then, as you might imagine, in 1977, '78, the low-level nuclear waste issue started heating up with Beatty. There began to be noises like trying to put together a national nuclear disposal plan. I worked with Noel Clark from '77, '78. I was appointed by Governor O'Callaghan, and I was doing all the staff work for him for all of these kind of things, including the problems that eventually occurred at Beatty and some of the policy work.

Governor List came in 1978. In 1979 or 1980, Noel Clark was appointed to the Interstate Commerce Commission in Washington and he left. Since I was the only one there that had done any work on nuclear waste disposal, or had any knowledge of it, the List government asked me to continue doing all this work, and keep them apprised, but to look out for Nevada's interest in this national legislation that was coming along that eventually became the Nuclear Waste Policy Act.

Before then, DOE (or the AEC, as it was called then), had tried to site a couple of

other nuclear facilities at the Nevada Test Site on a couple of occasions—like Westinghouse’s concept of a retrievable surface storage facility. It was supposed to be air-cooled, on the surface. That kind of fizzled away in the mid-’70s because the nuclear power industry realized that they were never going to get by the lawsuits that national environmental groups were filing to keep nuclear plants from being built based on the premise that there was no permanent waste disposal.

The industry realized that these temporary, or surface, storage facilities weren’t going to cut it relative to solving that problem. They tried surface storage at Hanford, as well. The industry and government backed away from those things because they didn’t solve the problem that they were looking at—lawsuits being filed banning new plants until there was permanent disposal.

Of course, later on the NRC got involved in this waste confidence stuff that really, then, justified continuing to build plants based on the fact that they believed onsite storage was safe for hundreds of years.

RM: Was this pre-Three Mile Island?

BL: Yes, a little bit of it. Three Mile Island, of course, happened in the middle of this, in 1979. Before then, not only in Nevada, but in the nation, people were relatively excited about things nuclear. The last plant in this country, as you know, was sited and built in 1974.

RM: And that’s Palo Verde in Phoenix?

BL: Yes, I think that’s right. Three Mile Island changed the attitude of everybody about things nuclear. And later on, of course, it was reinforced by Chernobyl. So anything nuclear was viewed as very dangerous, very hard to deal with.

RM: Why do you think the US had this antinuclear sentiment that began with Three

Mile Island, and yet France has moved forward with nuclear power?

BL: Well, it slowed down a little bit in France as well. I think the primary difference is that the French government owns all the nuclear plants. The whole nuclear cycle is owned by the government, completely. I think that that has a great deal to do with the ability to go ahead and site facilities.

And in France they weren't interested in looking at disposal facilities. They were, basically, reprocessing, not only for themselves, but for other countries, but leaving the fuel at the reactor sites in dry storage. They believed that that was ultimately the safest thing to do.

In this country, the industry was bent on, "We're not going to leave that stuff at the plants because people won't let us build new ones if we can't get rid of the stuff that's there." There was never that problem in France because it was understood that at least for a couple hundred years, they didn't have to think about any disposal ideas.

But it wasn't without incident in Europe. The English Channel and the area off the coast of France where they were dumping low-level waste materials on an ongoing basis, the whole North Sea, is highly contaminated. In fact, today you can hardly buy a piece of wild Atlantic salmon that does not have trace elements of radioactivity.

RM: Because of their disposal in the sea?

BL: Yes. They just dumped it in the water.

RM: Whereabouts were they dumping it?

BL: South of the English Channel. More toward the central part of France, where they have all the facilities built. And, of course, England was dumping on their south coast, where they had built reprocessing and other facilities. They also were dumping it right into the Irish Sea. So they weren't without incident.

RM: That's interesting. Now, when you were growing up, with your father working for DOE, were there discussions in your home about nuclear power? Did you pick up any impressions or ideas that helped you form your own concepts?

BL: The way DOE dealt with the public was always a topic of discussion because—and this was part of the culture that existed during Yucca Mountain, and prevails today—they have this idea that they're virtually infallible and that they can't let the public know that they're not. Everything is right and they never make a mistake. They believe, somehow, that the attitude that they are perfect inspires public confidence.

Then, when it's discovered that they aren't perfect, the public is highly skeptical. So DOE viewed the public in a very odd way—that the public was almost the enemy. That, "If they knew what we knew, then they'd understand everything is okay, but we can't tell them what we know because they're not sophisticated enough to understand it." We did talk quite a bit about that aspect of DOE.

It came to a head more after I started working on the nuclear waste project. My dad was still working for DOE in Boulder City, and in the mid-'70s, he finally retired after we've had lots of discussions about DOE. Some of them got very vocal and my mom would step in and say, "You can't talk about this during dinner," and all. She was a little upset about it.

RM: Now, he was pro DOE and you were kind of anti?

BL: Yes, because it was pretty obvious that they weren't who they said they were. They instill a culture in the people working at DOE that doesn't allow for any dissent, or to question authority. My dad and I talked about that quite a bit. It wasn't till three or four years after he retired that he sat me down and said, "You know, all those things that you've been saying about DOE, now that I think about them, they're probably all

correct.”

RM: That is really something. Now to back up—because I’m really interested in different perceptions of nuclear energy—if you start with Hiroshima and Nagasaki and then come forward, one of the events that changed the public’s attitude would be Three Mile Island. But also, you have the downwinders here in Nevada. I don’t know how much that influenced national opinion.

BL: Somewhat.

RM: What was it that changed, in your view, the public’s acceptance of DOE?

BL: It’s just studying DOE and how they operated, and the things that they did. For example, in New Mexico, from 1976 to ’78, in the WIPP Project, the Waste Isolation Pilot Plant, they basically sort of bamboozled the state. It was clear that the state didn’t want the project. They believed they had an ironclad promise from the Secretary of Energy that if they didn’t want the waste facility plant, they could veto it at any time during the process and everybody would go away. And in the interim, there were going to be these commitments about millions of dollars in highway money, and all the waste would be shipped by train. And the ink was barely dry on the agreement when DOE announced they weren’t going to live up to any of those things. They just told them to screw off. The state took them to court.

RM: So that of course influenced your own development. I’m also wondering about the events that turned the public against nuclear power nationally. It seems like, in the beginning, or back in the ’60s or the ’50s, there was not an anti-nuclear sentiment. We had Admiral Rickover and people like him who were heroes.

BL: Yes, and it was true at the Nevada Test Site. You can look at Dina Titus’s book about the Test Site, among others—these events were viewed as, “Boy, we’re on top of

technology. We're proud of our country. We're keeping the Russians at bay. This is all part of the Cold War zone." There was a national security defense patriotism associated with the test shots and that kind of thing.

I think a little of the veneer came off when workers were injured at Baneberry and some of the other shots. I think some of the things at the Test Site were viewed more locally than globally, relative to the whole country. But I think that the downwinder experience and some of those events kind of took the shine off of the whole testing period. I think it was slowly deteriorating with more and more of the downwinders coming to light. Then you got to Three Mile Island, and that just blew the whole thing open.

RM: Yes, because it started off as a positive thing; for instance, with Admiral Rickover, and "Now that we've got a nuclear submarine." And they were running the Plowshares program, too.

BL: My dad worked on Plowshares. He did oil shale in Colorado, he went to Alaska, and down to the Mississippi Dome, and some of those things. They were all Plowshare projects. But they were all failures. For example, with the oil shale they realized that sure, you can generate the heat to free the shale but everything that comes out of there is highly radioactive. It was almost as if the guys didn't understand that everything that got touched by it turned radioactive as well.

I think the public started realizing that, "All right, if you do this, and you use this material, this piece is contaminated, and it's contaminated because it's close." It began looking like an endless chain.

RM: So you've got the emergence of a public distrust of DOE and of nuclear things in general.

BL: Not until in the late '70s. In fact, as you know, the Nevada Legislature, in 1975, in a resolution, AJR-15, actually asked to be looked at as a possible repository for nuclear waste. But the side of that that no one really knows, or talks about, is that it was actually a tradeoff. It was, "We'll entertain the idea of waste disposal in Nevada if you give us the solar energy research facility" that was on the table, which eventually went to Golden, Colorado. Everyone brings this resolution up as Nevada's invitation, but it was really the inducement to get the solar energy research facility, which we didn't get.

RM: I've always wondered how the antinuclear sentiment evolved.

BL: I think some of the antiwar movements in the early '70s helped feed that as well.

RM: Right. Here's another thing I've wondered about. The Democrats—basically liberals—are pretty antinuclear and Republicans tend to be pro-nuclear. Now, how did that happen?

BL: I never thought about it in those terms, but I'm venturing a guess that it's because the Republicans, as they are today, are so closely aligned with industry and business that they are willing to trust the industry, give them lots of tax breaks and other things, where Democrats really were not that cozy with them. But again, at Three Mile Island time, everything changed. That turned the world upside down for those guys.

CHAPTER TWO

RM: What were you doing when the Nuclear Waste Policy Act was passed in December of '82?

BL: I'd been working on the bill, trying to lobby for things like the two-house veto for states, and some of the provisions that were in the law.

RM: So you were lobbying Congress?

BL: Yes, along with a lot of colleagues from other states who were involved in it. There were several meetings with people from Texas and Washington and other places to get together—"Now, we can't tolerate that element in the policy. Let's try to move it this way." We were clearly outgunned and outmatched. We had no idea how strong and influential the industry was.

The Nevada Energy Office was put out of business in 1981 by the legislature. At that time, Bob List had asked me and a guy that was working for me, a geologist, to stay on as contract employees to advise them about all this nuclear-related legislation and that kind of thing.

Then, when Dick Bryan was elected governor in '82, right after the election I had a meeting at his request with some of his staff people. I mentioned that this waste policy law is coming and it's going to get passed. Nevada's in the crosshairs. And the DOE office in Las Vegas (for the Nevada Test Site) was making money available to the state out of their own discretionary money long before the act passed to do oversight and to keep tabs.

RM: Oh, really. When did they begin that?

BL: About 1981.

RM: And was it a good chunk of money?

BL: No, just \$700,000. But when you only had two people and you were kind of feeling your way along, it seemed like a lot of money. We started, as early as those days, forwarding some of that money to Clark County, Nye County, and Lincoln County. Because one of the things that we'd observed in New Mexico was that when the state lost support from the counties, the counties were operating on their own and were able to influence DOE to keep going at WIPP. Basically, some of the powerful senators from some of those counties really overrode the state. The state had a lot of strong leadership at that time but it was clear that the counties upended many of the state's plans to oppose the WIPP facility. Carlsbad and several of the other southern counties wanted it for jobs and that kind of thing.

We wanted to make sure that we had the counties on board with us as a part of the whole program. We were going to work together and we were going to give them money that they couldn't get. And they had their own issues. Lincoln County, of course, was interested in transportation, and Clark County, too. Nye County was looking more at the repository site. So Bryan said, "Until we can get you on board and I take office, let's just keep you under contract and set up an office with this money, in my office."

He said that it was pretty clear from '82 on that the public didn't want the storage facility. And the direction to me, by Bryan and future governors, was, "Do anything and everything you can to make sure this doesn't happen."

RM: What was List's attitude, as you recall? Where was he vis-à-vis Bryan, because Bryan was against it from the very beginning, right?

BL: Right. Bryan looked at it and saw how the public was reacting to these things and realized that the public was not going to tolerate any elected leaders that would facilitate

a repository, let alone be friendly to it. List was a little different story. He came in in '78 and in '78 and '79 there was a series of incidents at Beatty, including the discovery of the raid, with the tools, and all the rest of it, like trucks running into the thing on fire. It culminated with them, primarily, trying to close the storage facility in Beatty. It took the state another ten years before they actually accomplished that.

RM: Did they shut Beatty down? It's still going today, isn't it?

BL: Yes, but now it's not nuclear materials. It's only hazardous waste.

RM: And it was never high-level waste, was it? It was medical stuff and so forth.

BL: Right, it was always low-level waste. And DOE was involved in that. Although it was run by a commercial operator and was primarily for commercial low-level waste from, as you say, hospitals and other places. But they were represented by the nuclear industry.

So the nuclear industry and DOE were very busy trying to pressure the state to keep Beatty open, and it was open for low-level waste for nearly 20 years as one of only three waste sites in the country. So again, a lot of Nevadans thought, "Well, we've done our share. We've hosted this facility. Only three states have done this over the years, and we're one of them. And we don't have any nuclear plants. We've done our share."

But on the issue of high-level waste, List was very serendipitous. One day, it was, "Bob, you know, we've got to go kick their butts." Another day it was, "Well, maybe there's some money here. We should think about that." The next day it was, "No, we want to go do this, we want to go after them." So it was on again, off again. It was sort of wishy-washy and indecisive.

RM: One of our interviews is with Steve Bradhurst; and as you know, he was working for List on the MX project. He said List took a "Well, let's just see," attitude about the

MX program. He didn't come out really hard against it.

BL: I know, Steve was always conflicted by that.

RM: Yes. And I understand that Bryan beat up on List in the election for governor in 1982 because of his attitude. It's contended that Bryan saw what happened to List when he was a little neutral, or wishy-washy on a big project and thought, "That is not going to happen to me." So he took a hard negative position.

BL: List was like that on a number of issues, not just the big things. As state employees, it was like, "One day it's this, the next day it's that." You could see it in a number of areas, but probably the most visible was his fight on Beatty and on MX as well. I didn't have very many dealings with him on MX. We were part of the larger review group in the state, working under Steve's direction. But when Dick Bryan came in, the attitude about all that changed dramatically.

RM: I was at the first meeting they had in the spring of '83 regarding the nuclear waste storage facility at Yucca Mountain. I'll never forget, various state officials and others were there—Don Vieth chaired the meeting. Bryan came in with his big entourage; he'd probably been inaugurated two or three months before. He announced that he was unalterably opposed to Yucca Mountain, and he was the first speaker. I saw that as the official beginning of Nevada's opposition to Yucca Mountain. Would you agree?

BL: Yes, I think so. Attitudes had shifted so dramatically after Three Mile Island, and it was obvious that you probably couldn't retain your office if you weren't opposed to these things. And by that time, there was beginning to be a little bit of an inkling about how DOE was going to operate.

RM: I remember a conversation that you and I had in '84 or '85, somewhere along in there. My sense was that the Nevada public was kind of more neutral on Yucca

Mountain—well, maybe, maybe not. I said to you, “You know, Governor Bryan is on the wrong side of this issue.”

And you said, “Are you kidding? It’s the best political issue he’s got.” As it turned out, how right you were. I was really wrong.

BL: Well, during the campaign he had done lots of polling on this issue. As a state agency we had run a couple polls and we could see the numbers. Some 80 percent of the people opposed it.

RM: Is that right? Was it mainly coming out of Vegas or was it all over the state?

BL: It was all over, but it was stronger up north. I recall in the early ’70s, I was involved in the antiwar movement a little bit and it was very easy to organize and get people to events from here in an hour. But in Las Vegas, it seemed like everyone had other things to do: “Fine, but I’ve got other things to do.” The environmental movement, of course, has been much stronger in northern Nevada, even today, than it was then. But I know Bryan polled, and we had polled the issue, and we’d seen pretty dramatic opposition to the facility at Yucca Mountain.

RM: Could you talk a little about the evolution of your relationship with Bryan and about the establishment of the Nuclear Waste Project office?

BL: I remained a contractor until about ’83, and then Bryan put me on his staff. But the Nevada legislature, in 1985, wanted to formalize an office under statute. The most powerful guy in Nevada’s senate then was Jim Gibson from Las Vegas. He was definitely very pro-nuclear. He was in engineering—Pacific Engineering was providing a lot of engineering support, materials and so forth, to DOE, both at the Test Site and other places. So he had a financial interest.

And Joe Neal was there. He worked for REECo, which was DOE’s contractor.

They wanted to stick it to Bryan because they were Republicans. So they gave him the Nuclear Waste Project office, but they installed a commission over the top of the office in an attempt to mitigate Bryan's influence over the project and over the office.

They created a formula for the commission that apparently they thought would give the legislative picks to this commission a bigger and more influential role in order to keep Bryan in line. But as it turned out, the formula, you may know, had one representative from the association of counties. The governor was given a list of three candidates, and he picked one. There was somebody representing the league of cities. Again, a list of three given to him. Then the governor got three outright picks and that gets him to five. Then the legislature got to pick two individuals to sit on the commission.

I think they really made a mistake in the legislation; I think they wanted the three picks. But I guess in negotiation of the bill, finally they gave the governor the three picks. And of course, the governor knew that the cities and counties were going to be helping him; maybe the legislature didn't think of that. But the legislature ended up with two picks and those two members really have been, and continue to be, of relatively no consequence.

RM: And so they established that in '85? So you had two years . . .

BL: To put together the office.

RM: So you were working on ideas for the office?

BL: Well, we were within the governor's office. We had four or five people working already. We were upstairs, in the Capitol.

RM: Did you have an official title or anything? It wasn't formalized, was it?

BL: No, it wasn't formal; it was under executive order. Then I became the director of the office.

RM: Could you say anything about your relationship with Bryan in those two years and about how your office worked?

BL: We worked pretty closely together. I wasn't on the same track that Steve Bradhurst was with the weekly breakfasts and lunches or whatever they were that Steve had with List over MX. But basically the direction was, do anything and everything you can. So I kept them up to date on what we were doing. They really didn't know much about the nuclear issue, per se.

I worked a lot with Marlene Joiner, who was the chief of staff. And Tim Hay. They'd been in Bryan's office all the way. We got along very well. I kept them abreast of what we were doing and it was a pretty good working relationship.

RM: What was your impression, in these first two years, about what DOE was doing as far as Yucca Mountain?

BL: Well, the Nuclear Waste Policy Act passed in '82, and it called for DOE to put together a series of siting guidelines that would govern how sites would be picked and judged by DOE, ultimately. During the spring and summer of '83, DOE had named its potentially acceptable sites in the act.

Then they named a bunch of states, 17 states, for the second repository program. So it was a pretty good bunch of maybe 25, 30 states that had a real interest in these guidelines because they were going to dictate where everything went. And in the meetings, and in the drafts of the documents they put out, it was very transparent that DOE was trying to, even then, manipulate the system to make sure they got the sites that they wanted. It was obvious to everybody. And DOE was not forthcoming in these meetings. They didn't really address the issues, and they were very, "Listen, we're the government, we'll do what we want" kind of thing. "But here's some drafts."

We were kind of led to believe we were being consulted but in reality, DOE had everything cooked already. But the states got pretty aggressive near the end because everyone had seen what was up. We had lots of meetings with the different states that were involved.

So the first couple years were dealing with DOE over these siting guidelines. And DOE was disingenuous and patronizing and all of those kinds of things. It really cultured an attitude, not only from what we'd seen in New Mexico, but from our limited experience with them in the siting guidelines experience, that the only kind of thing they really understood was a big stick. You just needed to beat them over the head because they would run over you otherwise.

And we filed, as you probably know, lots of lawsuits. We filed one over the siting guidelines. We needed to have the threat that we would take them to court at any moment. I don't know if it improved the relationship any, but maybe it put us on a clearer path of where we were going vis-à-vis DOE.

DOE started involving the public. They were required to have public hearings, and the public began to kind of see how they were trying to manipulate everybody. I think that the public really drove this more than anybody else. They were opposed to this thing and they began seeing how DOE was acting. So when there were DOE meetings, the public began turning out in really big numbers, both in Las Vegas and in Reno. They were very critical of DOE because to them, DOE was sort of attempting to cook the books and manipulate the system for their own benefit.

RM: What sites do you think DOE preferred at that time?

BL: Just Nevada and Hanford. I think everything else, in their mind, was a throwaway, literally.

RM: I've never understood why they would want Hanford because it's so close to the Columbia River.

BL: One of the things that not many people know is that there was a 1979 comptroller general report that basically told the Secretary of Energy that there was very low public trust in DOE, very low public trust in things nuclear, primarily as a result of TMI. They said, "People are going to begin questioning your nuclear activities at the Nevada Test Site and the Hanford Reservation if, in fact, you can't find a suitable geologic repository on those sites. After all, you own the land already. The public is used to things nuclear." There were four or five criteria, but the primary one was that people were going to say, "If there's not an acceptable site at the Nevada Test Site, what the hell are you doing in the rest of your activities?"

So that was a real motivator for DOE. And, of course, when the Nuclear Waste Policy Act passed in 1982, it was understood that the first repository would be in the West. The second one would be in the East, assuming that there would be a second one. So that just played right into DOE's thoughts, the fact that the West was it. I don't know if they ever seriously considered Utah as a site. They had Canyonlands—there'd been some nuclear mining operations or something there so there was at least a thought that there might be some sympathy for nuclear activities there.

I think Texas was a throwaway all the way along. And DOE had done a lot of work in Mississippi and Louisiana in the '60s, as we mentioned earlier, with the Plowshare Program in the salt domes. Many people thought the salt domes were ideal places to put this waste. They were free of water and that kind of thing. But as it turns out, those states had pretty powerful delegations.

RM: And they didn't want it either?

BL: Nobody wanted it. There wasn't one of the 30 states . . . no one was willing to step up to the plate.

RM: In your view, was there anything that DOE did wrong the two years before your office became officially established that they could have done differently to make their case better or given them a shot at it?

BL: I don't think so. They placated the public with little things, but everybody knew they weren't listening to them. DOE didn't care what the public thought; they went about their business and did whatever. I think it was endemic to the organization and institution and they couldn't do anything differently.

RM: But what if they could have? Would you suggest better communication, public education, listening better?

BL: They could have, basically, offered the states a complete veto: "If you tell us to go away, we're gone." Although by then they were seeing that they weren't going to find a site. In 1976, DOE had a repository program and they approached some 36 states. They talked to governors, saying, "We want to look in your state for an acceptable repository site." And in Ohio and many other states, the governor just said, "Over our dead bodies. You're not looking here," and DOE went away.

But when the governor here said, "No, we don't want it here," they said, "We're not going away. We have the Test Site in Nevada, and you're going to have to live with this." I don't think there was anything they could have done, other than capitulating completely and saying, "We'll go away if you don't want us here."

But as I said, their approach is endemic to them. There was a great mistrust of things nuclear with the public and a big distrust of DOE itself over the lies about downwinders. Everybody knew those people had been harmed and DOE went out and

found doctors that said, “Radiation can’t cause any of these things.” I think there was a great deal of mistrust of DOE by the public, even then.

RM: What if they had offered billions to the state?

BL: It wouldn’t have mattered. It was always a lost cause. Dick Bryan was the one that coined the phrase that it’s like treating us like prostitutes. Now we’re just haggling over the price, without even identifying who we are. We’re not whores.

RM: He said that?

BL: Oh, yes. That was his line.

RM: What was your relationship with Bryan?

BL: It was pretty close. I’ve been a Democrat and supported Democratic candidates, but he and I were pretty close. We met frequently and he was always very good to me—very nice and very knowledgeable. We used to fly to D.C. occasionally and testify on bills and so forth.

RM: Now, how did things change when the legislature established your office?

BL: It didn’t really change much at all. We did have the commission that the legislature created. Dick Bryan named former Governor Sawyer as the chairman and that kind of set the tone for everything. Because Sawyer was a lifelong Democrat and highly supportive of Dick Bryan; he campaigned for him, and was very involved in those things.

RM: And Sawyer was opposed to Yucca Mountain?

BL: Oh, yes. I mean, it was the same sort of story—about DOE marching us to the desert to see the shots and saying all you had to do was sweep these little particles off you, and everything would be safe. We knew the scientists either didn’t know better or more likely, they were lying to the public. Because it was later found out, much later, that on the days of the shots in the ’70s, some of the management guys at DOE would move

their families from Las Vegas to Southern California for a day or two.

RM: I didn't know that. This was when they were doing atmospheric testing?

BL: Yes, and some of the belowground tests. They knew there was a risk but they kept telling the public "no big deal." There's plenty of material on it in Dina Titus's book, and others. They had the little cartoon fliers they'd hand out to the public. Then you've got guys like Joe Fallini and some of the other ranchers out in rural Nevada who were going crazy because they knew that wasn't the case. Their cows were getting sick.

RM: Yes, the hair was falling off.

BL: They'd see the pink clouds coming over the ranches. Everybody knew at that point that this was dangerous but DOE was pretending it wasn't.

RM: We had a mine out in Reveille Valley south of Fallini's place in those days. Guys from the Test Site gave us dosimeter badges to wear but we kind of laughed it off and hung them on our beds. Somebody at DOE told me, "That probably wasn't a bad place for it. You spend a lot of time in bed." We'd get up and watch the shots. The sagebrush around our camp in Reveille Valley was hot and people thought it was uranium; it didn't register that it was radiation from the fallout from the tests.

BL: Well, in those days, radiation was not something evil. It kind of could be friendly.

I mean, we were going to have nuclear cars, trains, planes . . .

RM: I don't know if you remember—in the shoe stores, they used to have what they called fluoroscopes. You would put your feet under this X-ray and it would show you where your feet were vis-à-vis your shoes.

BL: I've heard of them.

RM: My brother and I used to stick our hands under there and everything.

BL: I know a few guys that worked at DOE that would take their badges home and

throw them in microwave ovens and cook them to death. Then they'd go back in and, nothing.

RM: That's amazing. And what did your staff consist of when you were a consultant in the governor's office?

BL: I had a geologist that worked for us, a guy named Carl Johnson. I had hired him when we were at the state Department of Energy. Carl and I were the principal guys, until about 1984. Joe Strolin was one of the first people we hired, and we had some clerical people. We remained an office of about four and we had consultants. We realized right away that we weren't going to staff up with the kind of scientists we needed because the issues were going to change—one day you might need a geologist, the next day you might need a volcanologist, or whatever. So we were doing a lot of contract work, mostly with the universities—the University of Nevada at Reno, and Las Vegas.

That arrangement worked pretty well until DOE, later on, co-opted the universities, totally. They offered them a ton more money. And it was obvious, because the data might be used in licensing or legal procedures, that we couldn't share contractors. Some of the UNR and UNLV people tried to put up walls between the DOE employees and DOE contractors and our contractors, but DOE had so much more money that we just couldn't compete.

Under Don Vieth, we had this understanding that the Nevada university system was going to be the resource for the state, and that DOE could go anywhere else in the country they wanted. When Carl Gertz came in after Vieth, that all changed. It was obvious that Gertz's office wanted to co-opt the university because they could use that as a way to get more public acceptance. If the university scientists could be brought on board and be helpful, then everybody else would be.

RM: How big did your staff grow after you had the official office?

BL: I think we had six or seven people. We hired a physicist who worked at WIPP, in New Mexico, Peter Spiegler, to do some of that work for us and I think we just evolved later on. By 1987, we were getting maybe \$11 to \$12, 14 million a year. But as I said, we were mostly contracting. We had mostly a core staff, but most everything was contracted.

RM: Leading up to '87, how did you see your job, what did you see as your duties, then?

BL: Well, we keep getting direction from the public, and of course the elected leaders, who were driven by the public. And basically the message was, "Do anything you can to stop this. Anything." In 1985, DOE had made a cut in the number of sites they were looking at from nine to five. There was a lot of interaction with DOE in Washington in 1984, when Secretary of Energy Hodel promised the Texas elected leaders, and the public, that if the Texas people didn't want a repository, they didn't have to have it.

RM: He said that?

BL: Yes, in a meeting. We asked Ben Rusche, who was the DOE director, about it, and he said, "Well, it's just how the Secretary operates. And no, we really haven't made any decisions." And in fact in 1986, about a month before the decision was announced as to who the three finalists would be, we had all known, from our sources within Congress and everything else. But the Commission on Nuclear Projects had a meeting in Las Vegas and Ben Rusche came out, and basically said there had been no decision. Well, everybody knew there had been and he was up there sweating bullets. We have tapes of him sweating and uncomfortable. And five days after the meeting, DOE made the announcement and everyone said Rushie knew and he lied to us about it.

So DOE was, at that point, in a very manipulative stage. They were keeping

everything close to the vest. And they were not helping themselves with the public and the states in any way because it was back to the same culture—“We know better than everybody else; just trust us.” And people weren’t willing to do that.

RM: And the final three sites were . . .

BL: Nevada, Hanford, and Texas. The three state directors were myself, Steve Frishman was the Texas director, and Terry Hussman was the director in Washington. The three of us met frequently—we were on the phone nearly daily in a three-way call. “What are they doing to you now?” “Well, here’s what they’re doing here.” We were comparing notes about how they were staging the game. And it wasn’t long after that that DOE unilaterally announced, “We’re canceling the whole second repository program. We don’t think we need a second repository.” Even though the law required them to have one.

RM: It wasn’t even a legal cancellation?

BL: No, and that’s the issue with DOE. If you can’t trust them to follow the law as it’s stated, what makes you think you can enforce an agreement? Going back and seeing how New Mexico tried to do it, you see that agreements with DOE are hollow. And when New Mexico tried to sue DOE, the court told them, “You implied your consent by kind of agreeing to it under these conditions. Even though the conditions weren’t met, you essentially implied your consent. Therefore, you’re powerless to do anything about it.”

You could see that later, as they did have an agreement, finally, with DOE. When the state would bring up objections, DOE would unilaterally cut their funding off for six months or withdraw the highway money that they had promised them. So you could see the situation—once you sign an agreement with DOE, you’re powerless. And even if you’ve got an agreement for money, DOE’s not going to honor it if they don’t like what

you're doing. If they think you're being too hard on them, it's out the window.

They took these actions like the second repository unilaterally and they didn't honor agreements with New Mexico and the other states. So this cry came out in 1987 about the benefit agreement. It was in the legislation, but no one here in Nevada was buying that because "You can't trust these guys as far as you could throw them," and if you have to go to court to enforce the law . . .

At that point we'd sued them half a dozen times over how we could use the money. DOE said, "Well, it's supposed to be for independent oversight." Yet, as an example, we couldn't go out in the field and pick up the rocks we wanted. They had to pick them up at their choosing for us. So they wouldn't let you do the things that you needed to do unless they thought it was okay.

We went to court and the court said, "No, that's not independent oversight. You give them the money, they give you the general plan, and that's it." So that continued to cause problems with DOE funding. What we could use money for, in the early days, was a problem because they just didn't want us to do certain things. If they didn't want us to do something, we wanted to do it even more.

All of this led to tremendous distrust of everything they were doing. And all of it was leading to the idea that if you really want to get anything from these guys, you've got to sue them or have some sort of threat against them.

RM: What kind of fallout was there from them canceling the second repository?

BL: The western states were going, "That broke the law." But it was done, basically, before the '86 congressional elections. So all the eastern states that had been on the list for a second repository, some 17 or more, were saying, "I got us off the hook." No one on the Hill was going out there to say, "You broke the law." They were letting DOE go

forward.

RM: What can you tell me about the events leading up to the '87 legislation?

BL: We did a fair bit of lobbying. We hired some guys in D.C. that Dick Bryan knew and had worked with on banking issues and other issues. We lobbied pretty hard, and even in the early spring, it was getting clear where DOE wanted to go—Nevada. The '89 legislation was being drafted by McClure and Johnson and all the staffers weren't saying outright that Nevada was the choice, but everybody knew that it was.

And then in early '87, the Nevada legislature produced the Bullfrog County legislation, which Congress took as a signal that Nevada did want the repository—like, "Yeah, they're on board with it already." A couple of guys—Tom Hickey and Ken Redelsperger and Paul May—had this great idea that the state could rip off the money and cut Nye County out of it completely if it created this new county. This legislation was done at the eleventh hour of the session, and for some unknown reason, even though we counseled him and told him it would be a disaster, Dick Bryan signed it.

He almost immediately regretted it. I mean, he now calls that probably the biggest mistake of his political career. Of course, saved by the bell, it got overturned as being unconstitutional. But the impression was left with Congress, and that opened the door for the repository.

RM: So that was a key factor in the passage of the '87 bill singling Nevada out?

BL: Yes, I think so. I mean, Nevada was in the front-runner's seat anyway, but when they passed the legislation establishing Bullfrog County . . .

RM: It became a sure shot?

BL: Yes. And of course, Hickey would go back and meet with Johnson and all those guys. He was telling them all what was going to happen, so they were all on board.

CHAPTER THREE

RM: So then the '87 legislation came out and Congress said Yucca Mountain is “the” repository.

BL: Yes. To nobody’s surprise, generally.

RM: Did your office operation change any after '87?

BL: No. Everything became easier because when it passed, it was called, by Dick Bryan, the “Screw Nevada Bill.” The public in Nevada was outraged. It was obviously a political game. All the way along, to us, this had been political science; it had nothing to do with science, it was all politics.

DOE was going to use the heavy hand, which they did. Every time they needed to have a decision made, they’d go to Congress. When the Nuclear Waste Policy Act Amendment passed in '87, the gloves were off. There wasn’t anybody who was even close to standing up for DOE, anywhere. Even in Nye County. In '87, the polls went up to the 90s. People were, like, “This is outrageous. How can people treat us this way?”

RM: And what did you do in your office? Did you have to just work harder?

BL: We did. We were getting a fair bit of money. In fact, DOE actually got one of the congressional people to start a GAO audit of us because they thought that we’d spent a bunch of DOE money lobbying, and, of course, that would be violating a statute.

Basically, through a year-and-a-half series of interviews and meetings and stuff, we told the GAO that all of our activities were directed by members of the Nevada delegation to give information to other members—that we didn’t do this ourselves. Our delegation was telling us, “Go give this pamphlet to Joe Blow from Tennessee.” Under the statute, that’s not lobbying. But they tried to get us on lobbying charges.

Then they tried to reduce the funding that the state had and it went down to half a million bucks, or whatever. That was a further example that these guys were just screwing us to death. Finally they restored the funding, but at that point . . .

Our strategy was that we couldn't let DOE drive the show. We had to put them on the defensive because we could never keep up with them. They had more money, more resources, but if we could force them to respond to us, then we were driving the show a little bit. That worked really well until late '87. We'd have studies that we'd do and throw them out there, and then DOE would have to respond to them. So we would try to keep them from running their own program.

But after a little while, it became clear that we couldn't keep that up much longer; we just didn't have the resources to do it. So we inadvertently got into a more defensive posture around them. We wanted to be the aggressors and take it to them, but . . .

RM: And what shape did the defensive posture take?

BL: We were still initiating the bulk of our own work, but it was slowly becoming evident that we needed to spend more time looking at their stuff. We had to really move it towards review of their material, and we'd supplement it with our own independent work when we could.

RM: Was your funding adequate, in your view, through these years?

BL: It was, up until about 1988. I think in '87 or '88, we got 14 million bucks. We thought that was adequate. But then it went down to \$5 million, and for a couple years in the late '80s, we got zeroed out because Congress was pissed off at how we were spending money.

For example, we were giving money to all the states that nuclear waste would go through—Nebraska, Colorado, Utah. We wanted to have everyone jacked up over

transportation issues through these states and we were giving them money to look at routes and those kinds of things. DOE didn't want us to do that anymore so Congress, at DOE's urging, put a restriction in that we couldn't build multi-state coalitions with the money.

RM: In your view, in dealing with DOE, what were your most powerful arguments?

BL: That the site was unsuitable. It was a bad site. It was good for political reasons; it had nothing to do with science. There were a lot of holes in what they were trying to do that they recognized they were going to have to shore up. For example, the volcanic question and the seismic issues. And in '88 the Jerry Szymanski issue came up, and they had to fight that for a long time. But it was really just that it was a bad site.

RM: Was transportation another issue for you?

BL: That was kind of secondary—how do they get it here? And the third one was sort of the socioeconomic issue. In a lot of survey research and polling that we had done, we worked with convention planners, business relocators, and senior citizen groups that basically were telling us that Las Vegas would be a completely undesirable place to go if, in fact, the repository was there. In terms of businesses, tourism would drop off—maybe not for a long time, but some. Seniors wouldn't move to Las Vegas—and at that time, Las Vegas was really in the business import business. Clark County was looking at some of those issues.

DOE would tout jobs, but the Clark County economy at that point was creating at least 5,000 new jobs a month. DOE was saying, "Well, eventually there'll be 1,800 workers." We're going, "Who cares?" When the economy went south, that gave DOE a little bit more foothold on that argument.

RM: So that was a third powerful argument. Were there any others?

BL: Well, the whole political angle. That this was a political job from square one. That the only science DOE really understood was political science, and those kinds of phrases—they were not interested in science, they were really interested in . . .

Because they were more concerned about how to market the repository, and that's how they got in bed with the industry in the early '90s. Remember the Nevada Initiative, and all the Ron Ditto ads, and all that? They were convinced that, somehow, they could advertise their way out of this, that somehow the public could be mollified by saying, "Look, it's not liquid, it won't leak in the ground, it's little pellets," and all this stuff.

And at that point, both DOE and the industry were involved in intimidation. They'd show up at meetings where I was speaking, and on both sides of me were guys that had stacks this high of paper that said, "Bob Loux quotes" on them. They'd have a video camera right in your face and attend some meetings. And a couple of times, citizens' cars were vandalized by these guys.

RM: Really? Now, that would be who?

BL: Industry operatives. They hired these Nevada guys to be tough guys, to act thug-like, in many instances. And if you look at the Nevada Initiative, the game plan the industry funded, it was written by Ed Allison, who was a longtime Laxalt aide and a lobbyist for the university system and others. And Kent Oram had run political campaigns in Las Vegas, and had been known for a sort of cutthroat style. And there was Don Williams. And they hired a scientific media truth squad so if anyone, they thought, spoke the wrong word, they'd jump down their throat. And of course, they were after us, day and night.

We'd go to a meeting, and Dawnie wouldn't let me go out and start the car. She would do it for me; she was very worried. Guys who belonged to a couple of citizen

groups would have bullets put on the door handles of their cars.

RM: You mean someone would put a bullet on the door handle?

BL: An actual bullet, right. It meant, “We’re here. We’re watching you.”

RM: They actually did that?

BL: Yes. I was threatened with a gun. “You keep this shit up, and you’re going to get a taste of this,” kind of stuff.

RM: What was it like, living through that era?

BL: It was very intense, although we never faltered and we never bought into it. We kept doing what we were doing—and we were seeing poll numbers that were saying that the public wasn’t buying any of this stuff. In fact, opposition was growing while the industry people were doing all this. Eventually they saw the numbers and pulled out and stopped the whole campaign because they were getting nothing for their money. In fact, they were breeding more opposition.

And a lot of us had seen the nuclear power industry doing campaigns like this in Japan and other countries where they wanted to build plants. They’d do all this feel-good stuff and in almost every instance, the industry’s plans backfired and more people became opposed. So when they did it here, we kind of figured that people were just going to be more opposed to it, and the numbers were going even further the other way.

RM: And about when was this?

BL: This was in ’90, ’91.

RM: Could you talk a little bit about your relationship with Nye County through the years? And did it change, or evolve?

BL: It did change, a little bit. We were all working, kind of, in harmony, in tandem, on a number of issues. We made reports to the county commission about what we were

doing. But after '87, the counties became entitled to their own funding and that changed the dynamics a little bit.

There was a provision related to the question of payments equal to taxes, PETT. We did a study for Nye County with two of the most respected real estate appraisers in the country. They were showing us the numbers of how much money would be available for housing the site relative to the size of this county that was upwards of \$20, \$30 million a year. But when the county negotiated with DOE, they didn't use any of our material. They were willing to settle for much less on promises from DOE and other sorts of things that we weren't aware of.

So things began to deteriorate a little bit at that point in time because it was clear that the counties—in particular, Nye County—were thinking, “Now, maybe we would entertain this idea of having the repository at Yucca Mountain for some money.” So after '87 the relationship began to deteriorate a little bit.

And eventually the county became a contractor to DOE. They did drilling for DOE, they had a cooperative agreement with DOE. And, of course, they had this grant relationship with DOE. They had a much closer relationship with DOE because, I think, the county wanted to really maximize the amount of money they could get and weren't, necessarily, aware of or concerned about the idea that by doing this, they were moving the whole project further along. But you couldn't tell Gary Hollis and some of these other people that they were doing just that.

For a while, the county was operated by guys like Dick Carver and others who were very much, “I've got the Constitution in my pocket and you can't do anything to me I don't want to have done.” That kind of helped fuel the fire for a while, that Nye County was going to oppose us. But a lot of those older guys kind of faded off. Dick Carver and

other people died, as you know.

RM: Do you have the perception that Nye County was going for the bucks after '87?

BL: They just weren't willing to confront DOE. Like on the negotiation over PETT—they could have had a hell of a lot more money but they weren't willing to play hardball. And, of course, that was the only game we knew.

RM: Because they didn't want to jeopardize their relationship with DOE. Is that your take on it?

BL: I think so. And I think that ultimately led to the idea that there's money involved.

RM: And going forward through the years, is that pretty much your summary of it? Or did it change into, say, the late '90s?

BL: Not too much. It was pretty clear that the county was kind of playing it both ways. They wanted the money, they wanted to be cooperative with DOE, but on the other hand, they were putting up some rhetoric that they were opposed to Yucca Mountain. They had discussions with DOE but I think DOE believed that the county would be willing to play ball with them.

RM: What about the other counties—Lincoln and Esmeralda and so on?

BL: Lincoln got taken over, eventually, by former DOE guys. Ace Robison was a consultant to the county and he ran the show there. He was a former Laxalt aide. And he hired some guys like Paul Seidler, who now works for the industry. Their agenda was, clearly, to make the most money they could and be as friendly and cozy with DOE as they could. Of course, the citizens there were going crazy, but the county commission was made up of people that were, pretty much, sympathetic to what Ace Robison and those guys were putting forward.

Esmeralda County only became positive about Yucca Mountain in the later years,

when they began looking at some of these projects as a way to get money. This was after the court cases in 1988–89 when they expanded the Yucca Mountain funding so it went to nine counties in Nevada. Up until then, the state was clearly driving the show. Then the nine counties were, like, “That’s the state. Let’s take the other path, and maybe we could be friendly to DOE. Maybe we could actually make some money off of this.” I think Esmeralda really didn’t come into play until we got to the issue about the Indian rail route, which they were heavily supporting.

But they could just see money. If a railroad was coming through, there’d be construction workers and there’d be stops along the way. People were going to need to supply them with water and other necessities. I think the proposed railroad really got Lincoln and Esmeralda and some of these other counties juiced on the idea that the railroad was going to make money for them.

RM: Did the counties getting their own money after ’87, and then the expansion in the number of counties receiving DOE money, dilute, in any way, your office’s influence?

BL: I’d like to say not, but we clearly were beginning to be more mindful about what the counties were up to, and we were concerned about their relationship with DOE. We didn’t want the situation we’d seen in New Mexico with WIPP to happen in Nevada.

While the counties were interested in their own welfare, per se, they weren’t looking at, in our view, the welfare of everybody—everything was going to be sacrificed at the altar of money. And they weren’t as skeptical of DOE as we were. They were saying, “They say it’s going to be safe. They’ve been treating us nice, and we got money, so what’s not to like?”

RM: I interviewed Chic Hecht not too long before he died. His take was that one of the reasons why he lost to Bryan in the Senate race in 1988 was that Bryan beat up on him

because Chic was for Yucca Mountain.

BL: Oh, no question.

RM: He was sort of bitter about that. Chic said it was Bryan who really spearheaded the opposition to Yucca Mountain early on.

BL: Bryan announced that he had to leave the governor's office because Chic Hecht was selling us down the drain on the repository. He said, "I'm forced to run. It's going to be a disaster for Nevada if he stays in office."

RM: Just to refresh my memory, did Bryan win big?

BL: Yes, he won very big.

RM: It wasn't a close election, then?

BL: Well, the only way Chic got there in the first place in 1982 was never making a public appearance. He came in late to the election and he benefited from the Santini-Cannon war that had gone on in the Democratic primary. It bloodied up Cannon, and Cannon had some ethics problems and the Republicans exploited that. Hecht never made a public appearance. In fact, he wasn't even a candidate till 120 days before the election.

RM: So Bryan was the linchpin of Nevada's position on Yucca Mountain?

BL: At that point.

RM: And for a long time. And what was Reid's early position?

BL: It wasn't that he was supportive of Yucca Mountain, it was just that, it seemed to us that he was just playing the political game—kind of going around and feeling the water out. He wanted to be in Congress. I think he really was always opposed, but he was not as vociferous and outgoing about it as Dick Bryan, who wore his opposition as a badge. Harry Reid doesn't operate that way. He's a much more inside player, not a public proclaimer of X, Y, and Z.

I went to Chic Hecht's office several times and it was kind of an embarrassment. As part of my duties, of course, I'd go back to Washington three or four times a year and meet with the congressional delegation individually or collectively and let them know what was going on and what was concerning us. And Hecht was just kind of a loon. First thing, when you went into his office, it was adorned with western wear, western everything, a display of barbed wires. And he had a sawhorse that had a saddle on it, and before you could talk to him in his office, you had to get on the saddle and ride the horsie. "Go ride the horsie. Go ride the horsie."

And in congressional hearings, on the Senate side we had a panel in about '82. I was in a group of five or six guys from different states. We were all testifying about what bad guys DOE were and all the members from the other states were saying, "What can we do to help you out?"

And Chic would say, "You're killing us. Here's the headlines. Here's what you said in Las Vegas." I mean, he was trying to beat the hell out of me.

And the other guys were going, "Your own member is beating you up on this stuff?" I mean, that was unheard of. And he was not very effective at it. He'd grandstand that, "Here's the *Las Vegas Sun*, and here's what you said in there. And none of that's really true," and so on. He was clearly in bed with the whole repository issue but I think everyone recognized that he was a very small player and a very intellectual lightweight. He had no conception of what was really going on, not only on this issue, but on some practical matters.

RM: Bryan didn't come in till '88, right? Who was carrying the ball in Congress vis-à-vis Nevada's position?

BL: Harry Reid was our sole House member then and the other Senate member was

Paul Laxalt. Laxalt retired, and that's when Reid went in. I think he went in in '84. Laxalt was in the Senate in '80, when the MX was decided, and he was there until '82; then he retired. Harry Reid ran against Ed Fike for the Senate seat and won. So the other senator was Reid.

RM: I remember at that first meeting in '83, Bryan showed up but Reid was back in Washington and he sent a surrogate.

BL: Yes, Reid has always been more of an inside player than a public announcement-type player. Dick Bryan was a little bit of both, but he was definitely more outgoing and more vociferous about Yucca Mountain—as was Grant Sawyer, who, until his death, was on the bandwagon all the time he was there.

O'Callaghan had flipped over from, in the mid-'70s, entertaining the idea a little bit. He had a working relationship with Mahlon Gates, the Nevada Test Site operations manager, and some of the other guys at the Nevada Test Site but later on . . . in the paper he was vicious in attacking DOE. I was very close to O'Callaghan.

RM: Was List the only major politician in Nevada who was up front about being somewhat supportive of Yucca Mountain?

BL: None of the congressional guys, other than Hecht, was supportive.

RM: I always thought Barbara Vucanovich was kind of iffy.

BL: Yes, she was. She made a speech in '87 to the legislature that we had to consider making a deal, and almost immediately she just got assaulted by everybody for it and she flipped over. She said, "Oh, no, I'm adamantly against it." And it was much more of an R and D thing. The Rs were much more supportive, by and large, and the Democrats were adamantly against it.

RM: Right, and that holds today, to a pretty good degree. Now, who were you and your

office interfacing with from '87 on? Was there any particular member of the delegation who was kind of your go-to person? And did that change through the years?

BL: Well, a little bit. Then, Nevada only had three members of Congress. We were such a small delegation, you could hold a kind of briefing. But the members were up against guys like Bennett Johnson and McClure and all these really pro-nuke guys; the industry had their hooks into all those guys. There wasn't really much our guys could do. But I met with all the Nevada members. I met with Barbara, I met with Reid and his people, and I met with Hecht. Of course, when Dick Bryan got in I had obviously more dealings with him. Reid was starting to become really active then, too.

RM: How long did it take Reid to get more active?

BL: I think after '87, seeing the poll numbers, and that people were really opposed—I think that really turned him around.

CHAPTER FOUR

BL: And again, after '87, the public was really who we were all working for. But there wasn't a lot the delegation could do, per se. We could plant questions in hearings for DOE officials, and some things like that. Which we did all the time.

DOE, after a while, became pretty adept at saying nothing. But it was really the public driving this the whole way along. And that helped us with this "take no prisoners" kind of attitude. It was literally viewed, in our mind, as war. I mean, we were at war with these guys and anything was fair, as long as you could get away with it.

We pushed the envelope on funding. We pushed the envelope everywhere we could because we wanted, clearly, to have the message "over our dead bodies" not only in Nevada, vis-à-vis the public, but everywhere else. "You might be able, in the end, to do it. But it's not going to be easy. You're going to have to crawl through a lot of stuff to get there."

In ways it's a little bit like the old adage about fighting city hall. People say you can't do it. People say you can't fight and win against the federal government. Well, you don't know unless you try. And even if, in the end, you don't win, you've gained a huge measure of self-respect, not only as people but as groups of citizens, as a state, that they (DOE) are going to take us seriously—we're not just going to be patsies for you guys.

And I frankly believe that we have won, that the Yucca Mountain repository is not coming back.

RM: You don't think it's coming back?

BL: It's dead. We've studied the history of these big federal projects. Once the funding starts being curtailed, and once they head downhill . . . the Clinch River breeder

reactor, the Super Collider, they're gone. DOE's history in completing major projects like this, according to the GAO, is virtually zip.

RM: How do you see the future of spent nuclear fuel?

BL: I actually think that it's going to be held at reactor sites. We haven't seen any new reactors in 25 years; and it isn't because of the environmental movement or anything antinuclear, it's because of money. I mean, these things are so grossly, and hugely, expensive that the payoff for them is over such a long period of time.

Plus, you've got these other things like waste disposal. I see a lot of utilities migrating away from nuclear energy as an issue and doing more renewables—clean natural gas or other kind of technologies. I think that the utilities are now big into another ill-fated concept, reprocessing, which is never going to happen.

RM: You don't think reprocessing is going to happen? And transmutation, and all that?

BL: It's possible, but you have to have large reactors that drive these things. And then, of course, then you have the waste from those things, assuming that they work. Guys in Los Alamos were telling us they were working on transmutation, that it may be \$50 billion, and that we might be there 50 to 100 years from now, but I think, in the interim, we'll probably be closer to fusion as a power source.

RM: So you don't even see nuclear as a bridge to fusion?

BL: Well, I think it has to be, simply because we have 103 operating reactors right now. If they all went down tomorrow, we don't have other things to back them up with. But I think it's going to evolve over time. And anyone who thought you could site a reactor in southern Nevada . . . not that it hasn't been tried; the industry tried it.

RM: Where did they try it?

BL: They tried it at Yerington at the Fort Churchill Power Station. That was supposed

to be a nuclear plant, but they started looking at seismic activity in the state and the scarcity of water to cool them and determined that you couldn't site any of these things in southern Nevada, where the seismic risk is much greater. Anyone who's talking about reprocessing plants down there, or reactors, have no idea what they're talking about. It's never going to happen. And there's no water; reprocessing is hugely water intensive, astronomically.

RM: Well, how do you see the future of Nevada's economy?

BL: I think it's going to pick back up again. The business community will gain some confidence and start investing. I saw on one of the news stations that mergers are preconditions for real big economic activity, and you begin seeing some mergers now. I think Las Vegas will continue to be a very big destination resort place, albeit maybe moving away from the family place that it tried to be a little bit ago. I saw Oscar Goodman on Stephen Colbert's show or one of those programs lately and he was very confident that that's what is going to happen. I think you'll also see some light manufacturing. I think tourism will pick back up again once people have money in their pockets and feel like they can vacation again. I don't see it as being bleak. I think housing vacancies will pick up, and I think that will lead to housing prices increasing, and some of those things.

RM: Looking at the long term, you don't see nuclear power as playing a huge role for humanity?

BL: I just don't. Maybe I'm biased that way, but I don't see it happening. There are just too many issues associated with it that are solvable on paper. The engineering guys say, "Yeah we can do that." But as DOE and others have found out, when the rubber hits the road, it doesn't necessarily work out that way. You can design anything you want in

the abstract and it looks great, operates great, but there are just too many issues. I think local governments, state governments, have a much greater role in things. People realize that you can obstruct, you can delay, and you can sometimes kill these things outright.

I think that renewables and other kinds of things are going to really move forward, though it may take some time. And I don't see any new reactors built in this country, primarily because of economics. I mean, guys on Wall Street are not going to finance behemoths like this anymore. If they had small, compact units . . .

RM: Which they're working on, I understand.

BL: That might be something to look at. But they still have the waste disposal issue and a lot of the water issues and things like that.

RM: What happens to the waste that's now sitting at 50 sites? How do you see that problem?

BL: I see it staying there 200 or 300 years.

RM: That long? Well, who knows? I don't think we're going to be around in 200 or 300 years. [Laughs]

BL: I don't either, but I think it'll just stay there for quite a while. There might be, ultimately, a geologic repository, but it's going to be a hell of a long time before this last mess is out of the collective minds of the nation. Generations are going to have to go by so people, in essence, forget how manipulative, and how distrustful, and how dishonest the federal government was in dealing with these things. It would take a culture change inside government, and I'm not sure I see that happening. They're pretty set in their ways.

RM: Right. Could you talk a little bit more about your relationship with the various governors you've worked under? We talked about your relationship with Bryan, and then,

who followed him?

BL: I've been very fortunate to have had very good working relationships with all the governors. Well, perhaps the latest, not so much. But very good relationships, and they all gave me the independence, essentially, to develop and carry out a strategy. There's been very little interference from any of the governors. It's just been, "Do what you can to stop this thing." There was no direction on, "You should look at that, or look at this." We operated very autonomously and very independently. Situations change so rapidly that you have to be able to have the flexibility to be able to adapt to those.

My dealings with Mike O'Callaghan, when he was governor, were somewhat limited; I was a newly hired guy at the state. But when we did have dealings, it was very cordial and friendly.

I had a pretty good working relationship with List. I think we trusted each other. It was hard because, as we've said, he was a little wishy-washy and didn't give a lot of direction on how we should go with things.

RM: Were you interfaced with MX, at all?

BL: A little bit. I was part of a team. I don't know if you know what the strategy was—the state was cut up into little teams to look at various aspects of the program. I think I was on the energy team with 20 or 30 other people that were out looking at the energy needs for the MX—where that would come from. I didn't have a really deep involvement with MX.

I had a great working relationship with Dick Bryan, and in fact, still do. I had a really good working relationship with Bob Miller, who served for ten years. I think he was the longest-serving Nevada governor. He took over the two years of Bryan's unfinished term, and had two terms of his own. We were very close and we had a good

working relationship. He was very committed to the issue. He and I were also on basketball teams and I played basketball with him for nearly four or five years; we'd play at lunch.

We were very close. I enjoyed working for him. At the end, he was kind of partisan. When Kenny Guinn was elected, Guinn and Pete Ernaut called me up and asked to have a meeting in Las Vegas and I went down there. This was before he took office, I think in November or December. And he said, "We'd really like you to stick around."

I said, "Doing the same stuff? No difference in strategy? No change in direction? Nothing?"

"No, all the same stuff."

I said, "Fine."

I ran into Bob Miller a few times and he kind of criticized me for, "Well, you're working, now, for a Republican. You should have quit in protest after he was elected."
[RM laughs]

And I said, "I understand what you're saying, Bob, but I'm really committed to the issue. And if I can keep doing what we've been doing the last ten years, and they want me to do it in spades with them, I'm going to do that." But I've seen Bob Miller since, and we're good.

I had a very, very good working relationship with Kenny Guinn. He was one of the nicest men I've ever known, or worked for. He was very supportive, very helpful. I'd fly back to D.C. with him a lot. We'd joke and laugh. And we used to do things in D.C. together. And of course, I was with him when he had the big rally and news conference in Las Vegas the day before we flew to Washington to deliver the veto message in 2002. We made all the rounds to the Speaker's office, the Majority Leader . . .

I'd go with him to the National Governors' Association meetings and he'd look and say, "Wow, there's huge lines at the bar, I think I'll just go back there and help out." He'd go back behind the bar, roll up his sleeves, and start pouring drinks or getting beers for everybody. He was a really regular guy. He and his wife were some of the nicest people I've ever known, really great people.

RM: What was it like to have this kind of relationship with a powerful figure like that?

BL: Sometimes, initially, it's kind of intoxicating, to some degree. You know, you've got his ear, and all that. But you're treated as an equal, and that was . . .

RM: Did they typically treat you in that way? Was that their style?

BL: Yes, most all of them. Not as an equal like an elected official, but as, "You're a guy working for the cause, same as I am," kind of thing. They had a multitude of issues they had to deal with but on this one, we were pretty close and tight.

So I enjoyed a really close working relationship with all these governors. And former Governor Sawyer was chairman of the commission for better than ten years. I worked with him almost daily—I was in Las Vegas in his office all the time. I've worked for seven Nevada governors but Sawyer wasn't governor when I worked for him. He was governor before O'Callaghan.

And they had the trust and confidence in me to allow me to, fairly independently, do what we needed to do to try to defeat the project. They didn't interfere with who we hired as consultants, for instance. It was really hands off—"Let us know what's going on, and if you need some help, let us know."

I staffed a lot of two- and three-day meetings for the governors. We'd go to national governors' meetings and I was there with the governors. I could travel on my own money; I didn't need state money. They used to have Western Governors' meetings

and NGA meetings and so on.

There is a funny story that I should tell you that relates to governors. When Kenny Guinn got elected and DOE and Congress wanted to cut our funding off, Harry Reid was helping us out. We were struggling, and the federal government was saying, “Well, look, if all you’re doing is going to attack us, and beat us up with the money . . .” and that kind of stuff, which is true.

We went into a meeting early on in Guinn’s administration. It was a delegation meeting in Harry Reid’s office. He was higher up in the Senate at that point in time. It was all the delegation, all four of them, plus each brought five or six staff members—so we had a room with 30 or 40 people, plus I was there with Guinn.

We sat down and Harry Reid was chairing the meeting. And the first thing, he just turned to Guinn and said, “You’ve got to fire Bob Loux.” And everybody in the room . . . I mean, you don’t do that in these kinds of meetings; that’s kind of unheard of. Everyone was shocked.

The governor turned to me and he said, “Don’t pay any attention to that stuff.” What Reid meant, as he later explained, was that we were never going to get funding restored to the state again as long as Bob Loux is there, because I was viewed as kind of the Darth Vader, the Evil Empire kind of thing.

Guinn just got up and said, “That isn’t happening. I’m not firing Bob Loux and he’s not going anywhere.” So he went, personally, and met with congressional people and ultimately, our funding was restored. I don’t think Harry meant it personally, but . . .

RM: Did he know you were sitting there?

BL: Oh, yes. They know who I am. I’ve been in his office a hundred times.

RM: So it wasn’t much truth oft spoken in jest, or something like that?

BL: Oh, no. He was serious. I know what he was getting at. After that, my relationship with Harry Reid was much closer than it had been up until then. I've been with him on lots of meetings and lots of trips. And of course, as he gets more influence with the Congress as Senate Majority Leader . . .

RM: Do you think, as far as Yucca Mountain has gone, Harry Reid would be considered the linchpin that has stopped the whole thing from happening?

BL: I think since Dick Bryan retired from the Senate, yes. Harry Reid has done all of the things that you'd expect someone in his position to do. I think he will go down in history as the man who killed Yucca Mountain.

CHAPTER FIVE

RM: And if Harry Reid, let's say, had never gone into politics, would the fate of Yucca Mountain have been the same?

BL: I have said that since square one, since the project started, all the way along the road, "This thing has zero chance of happening."

RM: How did you come to that belief?

BL: No. 1, I believed DOE to be incompetent. We've looked back at the history of projects that they've run, and I think even GAO looked at it. DOE owns and operates some 127 facilities that handle nuclear materials. And of those, 124 failed. I mean, the radiation of the soil, the water—and now as a country we're spending a half a billion dollars a year, trying to clean up what they've already done.

RM: You mean, like, Rocky Flats and Hanford and other places.

BL: Yes. There's hundreds of these kinds of facilities—Paducah, all these places in Ohio and Kentucky and Tennessee. Everything they've touched has turned to crap.

No. 2, we had enough tools to either obstruct or delay the project. And that was our strategy—delay, delay, delay. String this thing out as long as possible. They'll get tired of us sooner or later.

I just felt that we knew more about the site than, at least, they were saying they knew. We had people that were telling us that, for example, the canisters inside that mountain, because of the water that's there already—not new water, but water that's been in the rocks, 90 percent saturated with all these nasty chemicals, arsenic, fluoride, mercury, and lead—there's no chance that any of these containers are going to last more than a couple hundred years underground. It's impossible. It's because of the high heat

they put off, plus the high humidity; you have a jungle atmosphere in there.

Then, later on, DOE had their own study that confirmed that's the case. That's why they needed this elaborate titanium tent drip shield concept. They thought that would be the end-all. But titanium's really susceptible to fluoride, and in our view and the view of some of the NRC staffers, 60 years was the maximum you could get out of these titanium shields.

I think they knew all of this stuff, but suppressed it. They only wanted the information that was favorable to their case going forward, and they really deep-sixed any information that was not helpful to their program.

RM: So basically you're saying that they had tunnel vision, as far as it goes. Not letting in contrary evidence?

BL: And I don't think they were used to people standing up to them and not backing down; they didn't know how to deal with that. Because usually it's always been, "We know everything." The attitude is that the public is stupid and dumb.

And we were siding with the public. The ones driving our program and driving the state were the public. We showed DOE a front they had never seen before. I think we basically wore them down because every little solution they'd come up with to a problem, we'd have someone analyze it and shoot it down, all the way along.

And I don't think they, in the end, believed that it was a very good site. I mean, they were committed. Can you imagine how difficult, in an organization like DOE, for bad news to come up the chain from some individual scientist? I mean, you're fired. So I think that as a lot of issues surfaced, there were people there who knew about them, but they didn't dare bring them up because you're out of there.

One of the frustrating parts about it was, they had all the federal agencies on

board. So it wasn't just like Nevada versus DOE, it was Nevada versus the whole federal government. They openly said, "The NRC, the EPA, and us—we're all working together as a team to get a repository built."

In our meetings with EPA—for example, on radiation standards—they got continually thrown out in court. I mean, we were on our fifth version. The NRC was on its fifth version of licensing rules, as DOE was on their fourth version of the siting guidelines. It was clear that they were just moving the goalpost to make sure that the ball went through while it was in the air. And we viewed it as, if the ball's in the air, if you're fair, you let the chips fall where they be. Of course, we were naive. They didn't do that.

We met with EPA, and said, "Why don't you propose this standard? This would go through, and it's virtually . . ."

"Because we'd been told by the administration, 'Do nothing that might cause Yucca Mountain to go down. We don't care what it is.'"

RM: They had been told that?

BL: They told us that. So even if people are getting radiation doses and it violates every other standard that they've ever worked on, they have been told, "Do nothing that would do something to cause Yucca Mountain to go down."

RM: And who, at the top, would have been doing this?

BL: It's the White House. And DOE corralled the other agencies. We FOIA'ed it and found out that, all along, the three agencies had been meeting jointly and colluding, in our mind. So the NRC, as an independent regulator, is in bed with DOE. EPA is the independent standard-setting agency and they're in bed with DOE. The whole government has said, "This is a national priority. You get this thing done, and do nothing that would stop it." I think that caused a lot of people within the federal government, as

well as other states and other scientists, to see this, and realize, “There’s nothing objective going on here.” I mean, it’s raw political science.

RM: I’ve heard it said that within DOE, there’s a selection process—that they don’t get the best and the brightest within the higher echelon of DOE, and that compromises what they were doing. I’ve heard it suggested that it compromised what they were doing at Yucca Mountain.

BL: I think that’s been true all the way along. No. 1, everybody knows that, in the final analysis, the objective of DOE is going to outweigh science. So if you’re a reputable scientist, you don’t want to be seen as being in DOE’s pocket. That’s not helpful for your career, even though they provide a lot of money.

So the only guys that really went for that are guys that weren’t top-tier scientists. They were lower down and saw nothing wrong with feathering their nest with DOE money and working with them.

In these peer review groups that they used to have, where DOE would make it clear to these guys that if there was a questionable piece of data, and they pulled a peer review group to see whether it was any good or not, you could see, in the minutes of these meetings, where DOE was literally threatening these guys, “If you ever want to see a dime again at your university from the Department of Energy, you’re going to go along with . . .”

RM: You saw those things? Do you have any specific anecdotes?

BL: I don’t. A couple of guys that were in those things told us that. I mean, that’s the reason they stopped doing it—DOE was saying, “We’re not here to question what we’re doing, we’re here to validate what we’ve already found out.” And that’s not science.

I think DOE would be better served if they’d let the chips fall where they may

even though it might, in the end, jeopardize this project. But that would garner them more public support if the public really felt, “Well they’re telling it like it is.” I mean, sometimes it’s good, and sometimes it’s bad, but they’re telling it like it is.

What the public got, though, is “Everything’s good all the time. We’ve got nothing bad or incorrect.” And no one bought that. They would be better served if they were much more upfront and open with the public. I don’t think they could do it now, but the public would have trusted them more, as well as the NRC and some of these other agencies, which have very low trust on all the scales that we measured. If they were just more open, more honest, more forthright, and let the science fall where it does. But they were never willing to do that.

RM: Do you think it was a mistake for the nation to try and find a permanent geologic repository, or any other place, for the waste?

BL: No, I don’t think that’s a mistake. I think the mistake is trying to force a facility like this on a community that doesn’t want it. And in fact, France and all these other countries said the same thing—it has to be a completely voluntary siting program. You have to agree. You have to be in. I think this lesson has gone worldwide. We’re the only country in the world that’s still trying to force a facility on a community that doesn’t want it. Everyone else has gone to, “We’ve got to let the public decide. We have to let the public in the door. We’ve got to let them. If we have to provide inducements, somehow, that make it a little palatable all right, but it has to be a voluntary program.” France and all these other countries have gone to the position that, if you want us out, we’re gone tomorrow.

RM: So in 1980, or back in that era, if there was a perceived need for a geologic repository, they should have taken a different approach and worked with local

communities?

BL: I believe that's true. Even Bennett Johnston and others that architected the '87 Amendments Act said it was the biggest mistake they made in the program, trying to force this on the community.

RM: And that was particularly true of the '87 legislation, wasn't it?

BL: Oh, yes. That was the epitome.

RM: Could it possibly have worked if they hadn't have put the so-called "screw Nevada" bill in?

BL: It might have. If you'd kept all the states involved and not limited it to one or two that felt like, "Well, I'm being a sacrifice zone for the nation." If they would have kept working with all the states and moving this at a much slower pace. They were schedule-driven because they realized that if there was a lull, maybe they couldn't get the momentum going again.

They would have been better off to string this out over a longer period of time, maybe 20, 30, 40 years. Take their time, do the science at a number of sites. Let the states do their own science. Nothing could have been worse for the whole effort, and the country, than this force-feeding. That poisoned the atmosphere for everybody.

RM: In your view, did the '87 legislation kill it?

BL: Yes, I think so.

RM: It had a shot before that?

BL: It might have, but maybe not. Everyone was so anti all the way along, it might not have. But clearly, this way was not going to work.

RM: Before we wind this up, is there anybody on your staff that you would like to mention, or other people that worked with you, like contractors that you're particularly

proud of?

BL: I think most all of them. Joe Strolin has done an exemplary job, first working with the counties and the cities. He's been a consensus builder, creating a coalition in the transportation issue.

And Bob Halstead. Bob came to work with us once Wisconsin was off the list of possible repositories. We hired him right away because he knew so much about transportation. He started as an expert.

And as soon as Texas was off the list, I hired Steve Frishman. Steve's in the same area; a great asset. He's got a very unique ability to see science and technical problems so quickly, and see them in the complete sense, that he sees what's wrong with them. He's been very good.

Carl Johnson, who worked for me originally as a geologist, was a great guy. He did a lot of good work. Some of the guys we hired in public relations were very good— Sam Singer, out of San Francisco . . . and there's a number of clerical people and others. And ultimately, there were a lot of lawyers. As we got going it became more of a legal issue. Joe Egan and his partners, Marty Malsch and Charlie Fitzpatrick, did a tremendous job, as well.

But I think this was a universal effort, mostly driven by the public, who didn't want this thing and were really telling everybody, "Do whatever you can to get it stopped." So it was the public, the elected leaders, the city and county people, and then the contractors and people that we hired. And the Nevada congressional delegation. I think this was a collective effort that succeeded because everyone was working together.

RM: And again, your projection is that Yucca Mountain is dead?

BL: Yes. It's interesting to me that now some pockets of support are growing in

Nevada, all occurring after the announcement that it's dead—I mean, when it's really hopeless.

RM: And also when the economy is really in a bad way.

BL: Right. We were fortunate, I think, that we never had a really bad economy. That might have changed a lot of the dynamics. Like in this election [2010], you see some people like Tarkanian and Angle talking about reprocessing this stuff. And you've got little pockets now in Reno of some business-types and others saying, "We really missed the boat here." And that it's not too late. There's this guy Ty Cobb, who's sort of a political gadfly in Reno. His claim to fame is he did national security issues for Laxalt. Laxalt comes back again. A lot of his people were all but working for the project.

RM: And he was for it, right?

BL: He was very much for it. They're now saying, "Look, there's money to be made," and "We blew it." And getting people jacked up about, "We can revive it, we just need to show our support." But I think the election of Obama was the turning point that spelled the end. And then, Harry Reid, of course . . .

RM: And it was Harry Reid who extracted that promise that the repository program would be canceled?

BL: Right, he got the commitment out of Obama when he was here and he told Nevadans it's over if he gets in. The commission that Obama put together has been directed that Yucca Mountain is not on the list. There's, obviously, quite a few people within the federal government, and within DOE and some of the other places going, "Jeez, we can always go back to Yucca." History says that once these things head down the hill and funding declines, there's no coming back. You'd have to gear up such a big effort to get it together that it's simply not going to happen. Especially when, I think,

everybody knows that it's a bad site. You'd have to apply so many engineering measures to make it work, and even those measures aren't going to work, so you really can't get there from here.

RM: How do you see your office in terms of its future? Is it winding down?

BL: Yes. It's clear now that it's an archival mission—putting files in order and things like that. There's not a lot going on. There are a few meetings here and there. The state recognizes it's over and the governor and the legislature can feel free to cut some of its funding. You can't have it both ways. You can't say that it still could happen, yet you're out there saying it's over. I think that's all going away and I think it should. I mean, there's no reason for the agency, any longer, to be there.

RM: Is there anything that you might want to add? (By the way, you are very well-spoken.)

BL: Well, in doing my own book . . . and public speaking was something I did a lot of; in some cases a hundred times a year. So you really kind of hone in on the things that you think are important to the people.

I know in speaking to some of these engineering groups in Reno more recently, when you explain all this elaborate engineering that's got to go into fixing the problem, and that each solution has its own problems, and what the cost of those problems were, these guys would just roll their heads, saying, "Well, this is never going to happen. This is crazy. I mean, this is nuts." Yucca Mountain was picked because it was supposed to be a good site and it turned out to be a bad site, and you're going to try and do all these things to make it work which aren't going to make it work? This is crazy. We're going to need, what, a quarter of the world's titanium supply just to build these drip shields?

RM: Is that right?

BL: Yes, and it's all in Russia. Most all of the supplies are in Russia. It was going to be, like, a \$10 to \$12 billion add-on. And DOE didn't want to do it until 300 years into the project. And when you asked them why, they said it was too expensive now. Would the Congress come up with that kind of money 300 years from now? Will there be anybody around to even care? It was ludicrous.

RM: Well, thanks so much for this very interesting conversation.

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