Extended Community


prepared by

Susan DeSilva

submitted to

Nevada Site Office
National Nuclear Security Administration
U.S. Department of Energy

JULY 2004

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EXTENDED COMMUNITY
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prepared by

Susan DeSilva
Center for Environmental Remediation and Monitoring
Desert Research Institute
University and Community College System of Nevada

Publication No. 45209

submitted to

Nevada Site Office
U.S. Department of Energy
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This book is dedicated to fine men and women who are the soul and strength of the program, the Station Managers.

In memoriam: Roy Clifford – Stone Cabin Ranch
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<td>CIC</td>
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<td>FRMAC</td>
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<td>LANL</td>
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Acknowledgements

Without the generous support, both financial and intellectual, of Ken Hoar at DOE, this report could not have been written. His enthusiasm for this project and his dedication to the vision that the history of the CEMP should be captured and documented have been steadfast. Bruce Hurley, the CEMP Program Manager, has also been unfailingly supportive and patient with the process.

Special thanks to Daryl Thomé for providing me with a document that extensively detailed the origins of the program, thus allowing me not to “recreate the wheel” and to focus on the oral histories that are at the heart of this project. I have drawn from that document extensively here and hope I am only standing on the authors’ shoulders and not stepping on their toes.

Deep gratitude goes to David Shafer at DRI who stepped in and smoothed the bureaucratic wheels on my behalf, enabling me to do the work as well as lending a sympathetic ear as I moved through the project. Without a moment’s hesitation, he supported my moving outside of and beyond my job description to make a proposal to DOE for this project.

My supervisor, Diana Hovey-Spencer, offered encouragement while insightfully pointing out the pitfalls inherent in trying to do two jobs simultaneously. She endured with good humor, my incessant interview planning, and bouts of alternate enthusiasm and panic. I am truly grateful to her for unflagging humor, support and ‘where rubber meets the road’ good advice.

I am grateful to the men and women who took time to give me interviews and to engage in a dialogue over the last two years. Their willingness to discuss their participation in the program and other subjects of mutual interest has been extremely helpful.

Several CEMP Field Monitors allowed me to ride the routes with them thus giving me access to remote ranches and towns. They participated in several of the interviews with the
Community Monitors and provided me with a peek into what it really means to be a “road guy.” Ken Giles, Lynn Karr, and Scott Campbell were all kind enough to allow me to tag along and definitely contributed, not only to the interviews, but to the context of the entire project.

History is never complete. However, the people who have reviewed the draft manuscript have helped me make the history of CEMP as complete as possible. Their time, comments, and suggestions are greatly appreciated.

No oral historian can function without transcriptionists ready to tame the tape monsters into workable source documents. I was lucky to have Ann Stine of DRI and Laurie Boetcher of UNLV providing excellent and cheerful support.

Doing this project has been a wonderful experience and I happily accept responsibility for whatever might be misguided, incorrect, or stubbornly contrary.
Foreword

Studying the Community Environmental Monitoring Program (CEMP) provides a unique opportunity to trace a concept created by two nuclear industry originators from inception, as it transitioned through several stewardship agencies, to management by a non-profit organization. This transition is informed not only by changes over two decades in the views of the general populace toward nuclear testing but also by changing political climates and public policies. Several parallel histories accompanied the development of the CEMP: an administrative history, an environmental history, and a history of changing public perception of not only nuclear testing, but other activities involving radiation such as waste transportation, as well.

Although vital, those histories will be provided only as background to the subject of this study, the oral histories gathered in this project. The oral histories collected open a window into the nuclear testing history of Nevada and Utah that has not heretofore been opened. The nuclear industry has generated a great deal of positive and negative reaction since its inception. The CEMP emerged with specific objectives. It was designed to provide information to potential downwind communities and counter negative perceptions by creating more community involvement and education about the testing.

The current objectives of the program are to:

- Manage and maintain the U.S. Department of Energy, National Nuclear Security Administration Nevada Site Office (NNSA/NSO) offsite monitoring program including 26 radiation and environmental monitoring stations with associated equipment. Provide air sample collection and analysis, radiological and meteorological data collection, interpretation and reporting.
• Facilitate independent operation of radiological monitoring stations and data verification by private citizens living in communities in proximity to the Nevada Test Site (NTS).

• Hire and initiate training of local citizens to serve as Community Environmental Monitors (CEMs) in designated communities.

• Provide relevant training by qualified instructors to the CEMs as necessary.

• Assist and manage CEMs in accomplishing their duties, and ensure that contracts and paychecks are issued on schedule.

• Provide CEMs and Emeriti monthly materials to facilitate public awareness.

This project explores how those objectives evolved over time with changes in the nuclear testing program. How similar are today’s objectives to those originally established for the program? Do those objectives reflect a changing political landscape as well as changes in testing needs? Those questions and more will be addressed as we follow the program from its inception, through earlier versions administered first by the Public Health Service (PHS), then by the U.S. Environmental Protection Agency (EPA) to the current administrator, the Desert Research Institute (DRI).

In addressing those questions, the DOE standards for situations that might require monitoring should be stated. In December of 2000, the DOE published DOE/NV-209 (Rev.15), *United States Nuclear Tests*, a document that lists all U.S. nuclear tests and detonations conducted between July 1945 and September 1992. In that document, DOE defined situations that could require monitoring. “Unless otherwise noted, all nuclear tests at the NTS or the Nellis Air Force Range (NAFR) to September 15, 1961 produced radioactivity detected off site. Unless otherwise noted, no test at the NTS or the NAFR on or after September 15, 1961 had a release of radioactivity that was detected off site. The release of radioactivity from a test can occur:
• Accidentally as a result of a containment failure.

• Accidentally or deliberately as a result of post-event operations.

• Deliberately as a result of post-event controlled purging of gases from a tunnel.

All releases resulting from containment failure, even if not detected off site, are reported. Radiation releases resulting from tunnel purging or normal operations are not reported in this document unless detected off site, since they are carefully monitored.” That those ‘containment failures’ were a source of concern to communities surrounding the NTS and those in the path of possible radioactive clouds, there is no doubt. Was pressure exerted by the public before monitoring began for more government information? Did the ‘downwind’ communities perceive the monitoring that was being done on and around the NTS as inadequate?

Although many documents are now available relating to nuclear testing and monitoring, many have also been lost or destroyed for various reasons. Administrative transitions over time have created gaps in the paper trail for many government projects. The CEMP has stood the test of time, albeit with different names and administrators, and this project is an effort to ensure that the program's history and that of the people who participated in it, do the same.

In 1963, the government curtailed atmospheric testing. A moratorium was established on underground testing in 1992. However, with the renewed focus on ‘Test Readiness’ (the capability to resume underground testing on the NTS), maintaining a history and continuity of the Community Environmental Monitoring Program may be more important for the future than ever imagined.
Chapter One

Community Environmental Monitoring Program: An Historical Overview

A manager from the Atomic Energy Commission (AEC) wanted to go out and speak to some of the ranchers. He talked to his staff and his staff said, “Well, to empathize with the ranchers, talk to them about what they’re doing and, look at their places, talk about what activities are going on and that way you’ll develop a rapport with them and then you’ll be able to talk to them about atomic energy.” So, the manager went out and he went up to a rancher and, in the interest of developing empathy, said to the man, “So, what are you doin’ here?” The rancher replied, “I’m spreadin’ manure.” And the AEC manager said, “So what exactly does that do for the land?” The rancher looked him up and down and answered slowly, “Well, it puts nitrogen in the soil and that helps the plants to grow.” They talked awhile more about the manure with the AEC manager asking several more questions. Finally, the AEC guy, after a little bit of a break, said, “I want to talk to you about atomic energy,” The rancher looked at him for a minute and without batting an eye said, “You don’t know about manure and you wanna talk to me about atomic energy?”

This joke, told by one of the CEMP Station Managers, epitomizes the lack of communication and understanding that existed between government agencies and Nevada and Utah residents in the early years of atomic testing, a perspective that persisted for years after the testing moratorium. It was this distrust that the Community Environmental Monitoring Program was designed to remedy, providing communities and ranches with impartial scientific evidence to address their many concerns. How the program established trust in Nevada, Utah, and California communities and ranches, what the program meant to the government, agency, state institution and local people who participated, and why the program is unique, may be better understood by examining its origins and the people who continue to make it a part of their lives.
Monitoring – The Early Years

The pace of nuclear weapons research and development accelerated to the point that by 1949 the need for an on-continent testing area became paramount. Possible locations were studied for surrounding population density, weather, available labor pool, transportation, real estate available to the government, and security. In late 1950, President Truman signed the order establishing the Nevada Proving grounds (now called the Nevada Test Site). The first nuclear test in the United States, other than the July, 1945 Trinity test in New Mexico, was a one-kiloton device dropped from an Air Force aircraft over Frenchman Flat code named ABLE, executed on January 27, 1951. ²

The Offsite Radiological Safety Program (ORSP) became the responsibility of the U.S. Public Health Service (PHS) in 1954 through the Memorandum of Understanding between the U.S. Atomic Energy Commission (AEC) and the PHS. The major objectives were to directly measure or to collect and analyze representative samples of air, water, foodstuffs, soil, biota and other environmental media to:
(1) assess and document radiation exposure to the public and the environmental radiological condition of the offsite areas; (2) initiate actions needed to protect the health and safety of the public; (3) conduct a public information program in the offsite areas to assure the residents that all reasonable precautions to protect the public from radiation and other hazards associated with the nuclear testing program are being applied; and (4) determine compliance with applicable guidelines and legal requirements.

In the 1950s, nuclear testing was not conducted year around, but in series of tests requiring up to several months to complete. PHS Officers were brought to Nevada to conduct the surveillance of each series. There were no permanent continuously operating environmental monitoring or sampling networks. In 1959, national radiological health requirements were identified and the Southwestern Radiological Health Laboratory (SWRHL) was established in Las Vegas, Nevada. The SWRHL served as the western U.S. focal point for radiological research and surveillance and provided radiation surveillance and training programs for all states west of the Mississippi River, including Alaska and Hawaii.

A nuclear testing moratorium was in effect for the United States and the former Soviet Union from November 1, 1958 through September 1, 1961. In response to Soviet nuclear tests in August, the United States resumed testing on September 15, 1961. With the resumption of nuclear testing, the Nevada Test Site (NTS) went to year-round operation and SWRHL became the PHS base of operations for the ORSP. Also at this time, the PHS initiated the first network of continuously operating air samplers in the offsite areas.

The PHS continued the ORSP until 1970 when the U.S. Environmental Protection Agency (EPA) was created. In December 1970, the offsite radiation safety responsibility, the SWRHL facilities and the employees were transferred from the PHS to EPA. The SWRHL
acquired an expanded mission which included the development of monitoring techniques for a variety of environmental pollutants and to conduct national environmental studies. To reflect the new mission, SWRHL underwent several name changes and today it is called the Environmental Monitoring Systems Laboratory-Las Vegas (EMSL-LV). Within EMSL-LV, the Nuclear Radiation Assessment Division (NRD) was created to manage the ORSP.

In March 1979, the accident at the Three Mile Island Nuclear Power Generating Plant near Middletown, Pennsylvania, occurred. EMSL-LV was requested to respond to the emergency. Personnel from EMSL-LV traveled to Pennsylvania. They established radiation monitoring and environmental sampling locations in the offsite areas surrounding Three Mile Island (TMI) and a radioanalytical laboratory in the basement of the Pennsylvania State Health Department in Harrisburg, Pennsylvania.

There was much public concern and a general distrust of the federal government. This distrust was still evident in the summer of 1980 when purging the nuclear reactor containment vessel of radiokrypton was planned. To increase credibility and to develop a method to communicate the status of the radiological conditions of the environment around TMI, the Citizen’s Monitoring Program (CMP) was instituted. In each of the communities where the community monitoring stations would be located, local officials nominated residents as station managers. State and federal participants selected the managers from the nominees. EPA provided and installed the continuous beta gamma radiation exposure detector/recorder systems. The station managers were trained by the Pennsylvania State University and the Pennsylvania Department of Environmental Resources (DER). The managers independently analyzed the data they collected daily and reported them to their communities and the DER. The DER validated the data and reported them to the news media. The CMP, consisting of monitoring stations
operated and managed by local residents, was very successful in reassuring the communities that radiation levels were being measured and accurately reported by the federal government.

Bruce W. Church, DOE/NV and Charles F. Costa, Director, NRD, were instrumental in establishing the CMP around the TMI. Because this program was so successful, they proposed that a similar program be instituted in the communities around the NTS where the United States continued to conduct its Nuclear Weapons Testing Program. The NRD had well-established monitoring stations in these communities, but a similar community monitoring program would create monitoring stations located in highly visible locations where local residents would be aware of their presence, and have access to the radiological data and to the station managers. In 1981, the Community Monitoring Program (CMP), later called Community Radiation Monitoring Program (CRMP), and currently called Community Environmental Monitoring Program (CEMP), consisting of 15 monitoring stations located in the states of California, Nevada, and Utah, was started. The program has expanded and contracted over its life but currently includes 26 stations (see Map 1).
The initial station managers selected included two university professors (one in Las Vegas and one in Salt Lake City), nine were high school teachers, two managed retail stores, one was a retired science teacher who owned and managed a television repair shop, and one was a county water district employee. All station managers were expected to have their families participate in EPA’s Human Surveillance Program. They were required to visit the EPA’s Las Vegas laboratory twice a year for measurement of the radioisotopes in their body tissues by whole-body and lung counting of gamma activity.

The locations of the first fixed stations were as diverse as the backgrounds of the first station managers. In two communities, places were found on the grounds of the university campuses. Six communities provided space on the properties of the local high schools. Two found space on county property near the sheriff’s offices. One station was situated on the grounds of the community center, one was at a county park near the area swimming pool, and one was on county land along the main street of the town. Two were located in the station managers’ backyards, but were also near a bank and a retail store. All of the locations were visible, some more than others, and all were readily accessible to the public.³

The CEMP is currently a cooperative project of the DOE and Desert Research Institute (DRI), but has also included the EPA and the University of Utah. Initially, DOE sponsored the program while EPA provided technical and scientific direction, maintained instrumentation and sampling equipment, analyzed the collected samples, and interpreted and reported the data. The DRI administered the program by hiring the local station managers and alternates, securing rights-of-way, providing utilities, and performing quality assurance checks of the data. The University of Utah provided detailed training twice a year for the station managers and alternates.
on issues related to nuclear science, radiological health, and radiation monitoring. Currently, DOE sponsors the program and DRI fulfills the other functions. 

**Station Configuration**

![Early Monitoring Station](image)

**Early Monitoring Station**

Field Instrumentation and Sampling Equipment:

While testing was ongoing, each CRMP station had identical instrumentation and sampling equipment. (See Figure 1) They were designed to continuously monitor gamma radiation and sample the air for particulates, reactive gases and inert gases. The Station Managers name and phone number are prominently displayed to enable contact and questions from the public. Results from the sampling are posted monthly. Each station was equipped with:
• Air sampler for the collection of particulates and reactive gases such as radioiodines.

**Particulate and Reactive Gas Sampler**

The air sampler for the collection of particulates and reactive gases was a low volume constant flow rate sampler (approximately 0.06 cubic meters per minute) employing a 5 cm. diameter glass-fiber filter and a 5 cm. diameter activated charcoal canister. The glass-fiber filter would collect particulates 0.3 microns in size and larger.

When CRMP was initiated in 1981, the particulate filter and charcoal canisters were routinely changed three times a week. The volume of air sampled ranged from approximately 160 m³ to 250 m³. Beginning in January 1989, this changed to weekly change-out of the filter and charcoal resulting in an increase in the volume of air being sampled by each filter and canister to 570 m³. For non-routine sampling such as monitoring the accident at the Chernobyl nuclear reactor complex in the former Soviet Union, sampling intervals were reduced to daily filter and charcoal replacement.

EPA personnel calibrated the air sampler flow rate monthly in the field. The sampler was replaced annually and returned to EMSL-LV for service and complete recalibration.

DRI currently monitors for particulates with the weekly collection of the glass-fiber filter. DRI no longer uses the charcoal canisters as they were used mostly for iodine and it is very short lived.

• Atmospheric moisture collector for the determination of the tritium concentration as tritiated water vapor in the atmosphere.
Atmospheric Moisture Collector

The atmospheric moisture collector was fabricated at EMSL-LV. It consisted of a small aquarium air pump that drew approximately 800 to 900 cubic centimeters of air per minute through alumina silicate to remove the moisture from the air and then pumped the dehydrated air through a dry gas meter to measure the volume of air being sampled.

The alumina silicate and the dry gas meter were housed in a small refrigerator to increase collection efficiency and to provide constant temperature for sample collection. The dry gas meter was returned to EMSL-LV annually for servicing and calibration.

With the testing moratorium in 1992, it was deemed that sampling for noble gases and tritium, which have short half-lifes, was no longer necessary. Tritium sampling continued until the mid-90s then, was discontinued.

Whole Air Sampler for Noble Gas Analysis (radiokryptons and radioxenones).

Whole Air Sampler for Noble Gas Analysis

In the spring of 1972, work began to study the feasibility of continuously sampling the atmosphere to determine the environmental levels of radioactive noble gases. To fabricate the atmospheric sampler, EPA personnel traveled to Davis-Mothan Air Force Base near Tucson, Arizona. Air compressors used to charge machine guns were recovered from scrapped World War II P-47 aircraft and metal oxygen bottles were retrieved from B-17’s, B-24’s, B-26’s and other aircraft.

The sampling system consisted of the air compressor and three oxygen bottles. One oxygen bottle fitted with a limiting orifice and two pressure switches was used as the collection vessel. The other two oxygen bottles were used for sample collection.
Air continuously entered the collection vessel through the limiting orifice. When the pressure reached 1/2 atmosphere, the compressor was engaged and the collected air was split and compressed into the two sample collection bottles. The compressor disengaged when the pressure in the collection vessel was reduced to 1/3 atmosphere. Over a week sampling interval, approximately 1/2 m³ to 2/3 m³ of air were continuously acquired.

This sampling technique proved very successful. The initial sampling network consisted of four on-NTS and six offsite locations. The offsite locations were Beatty, Diablo, Hiko, Las Vegas and Tonopah, Nevada plus Death Valley Junction, California.

At the onset of the CRMP, the whole air sample for noble gas analysis was collected in this fashion. Although this sampling design was effective, the heart of the system was the 1940’s vintage air compressor. In the early 1980’s, no up-to-date replacement compressor with the required flow rate, size, weight, cost and ruggedness could be found. So NRD personnel along with the Air Products and Chemical Corporation from Allentown, Pennsylvania developed a cryogenic air sampler to replace the compressor based sampling system.

The cryogenic air sampler consisted of a sample collection bottle contained in a dewar filled with liquid nitrogen. At the temperature of liquid nitrogen (-195 °C) the air within the collection bottle liquefied causing reduced pressure. As a result of this reduced pressure, air was drawn through a limiting orifice and a tube connecting the collection bottle to the ambient environment. A cryogenic refrigerator maintained the liquid nitrogen level by recondensing the nitrogen.
In 1982 the compressor based systems were phased out by cryogenic samplers. After several years of operation, the cryogenic samplers became prohibitively expensive to maintain and operate. The expenses increased until 1987 when NRD replaced all cryogenic samplers with the original compressor based systems.

Sample collection problems plagued the compressor based systems primarily due to the aged compressors, but a replacement compressor could not be found. Finally, NRD personnel and EG&G Energy Measurements, Inc., in Las Vegas, developed a sampling system using the air compressor found in a diesel semi-truck’s braking system. This sampling system was very similar to the original sampler except it used four sample collection bottles instead of two. Also, the sampling was software controlled so that the sample collection bottles could be filled in series with the time to fill each bottle predetermined to be 6 hours, 12 hours, 24 hours, 56 hours or 168 hours plus one other option. This last sampling option was the method used at the CRMP stations. That is, one bottle was filled continuously over the one-week sampling interval. Concurrently, the remaining bottles were filled in a series; each representing approximately 56 hours of sampling.

When the four sample collection bottles reached NRD’s radioanalytical laboratory, the one week integrated sample collection bottle was analyzed first. If the noble gas concentrations were normal, that was the end of the analysis and the samples contained in the remaining three sample collection bottles were discarded. If the noble gas concentrations were elevated, the samples in the remaining three collection bottles were analyzed to give a better estimate of actual concentrations and arrival times. These
software based whole samplers were placed at all CRMP stations during the summer of 1991.

Each whole air sampler was returned to NRD annually for maintenance. All sample volumes were determined in the laboratory by weight. There were no data quality issues affecting the components in the sampler.

Sampling for noble gases continued until the mid-90s. However, because of the isotopes short half-lifes, sampling became unnecessary.

- Gamma radiation exposure rate detector, recorder and telemetry system.

**PIC**

The pressurized ion chamber (PIC) continuously measured ambient gamma radiation exposure rates. The PIC detector was a 12 inch (30.5 cm) diameter metal sphere containing 25 atmospheres of argon gas. An electrode was centered on the sphere and had a charge opposite to the sphere’s surface. As gamma radiation penetrated the sphere, ionization of the argon occurred producing a current between the outer shell and the center electrode. The magnitude of this current was proportional to the intensity of the gamma radiation.

The PIC had several methods of data display and recording. Exposure rate data were digitally displayed in microroentgens per hour (µR/hr) and also on a paper strip chart recorder. Approximately four hours of data were visible on the strip chart. The same data were recorded on magnetic media. Installation of satellite telemetering equipment of the exposure data via the Geostationary Operational Environmental Satellite began in 1987 and was completed in 1988.
The satellite ground stations were located at NTS and the Los Alamos National Laboratories (LANL) in New Mexico. The data were transmitted from either of these ground stations to NRD by dedicated phone lines. Every four hours the minimum, maximum and average gamma radiation exposure rates were transmitted via the satellite. If the exposure rate exceeded 50 µR/hr, that PIC would enter into an alarm mode and start transmitting exposure rates every minute. This would continue until the exposure rate dropped back below 50 µR/hr.

Once each week, NRD personnel placed an eight microcurie (µCi) $^{137}$Cs (Cesium) source on each PIC detector except at CRMP stations in Milford, Delta and Salt Lake City, Utah. The source was of sufficient strength to activate the alarm mode for satellite transmission. In this manner, a weekly system check was performed and quality control charts of measured gamma radiation exposures were maintained.

Because of distances involved, NRD personnel performed a monthly system calibration check on Milford and Delta. At the Salt Lake City CRMP station, the station manager or his designee performed this responsibility weekly. Annually, the PIC electronics were calibrated in the field and the sensor was returned to NRD.

Currently, there is a PIC on every station that is source checked monthly.

- Thermoluminescent dosimeter (TLD) for measuring integrated gamma radiation exposure.

**Thermoluminescent dosimeter (TLD)**

The TLD was designed to measure the integrated gamma radiation exposure over a three month interval. At the onset of the CRMP, each station was equipped with three
Harshaw Model 2271-G2 TLD’s. Each TLD contained two chips of CaF$_2$:Dy (dysprosium activated calcium fluoride) mounted in a window of Teflon plastic attached to an aluminum card. An energy compensation shield of 1.2 mm thick cadmium metal was placed over the card and the shielded card was then sealed in an opaque plastic card holder. At each station, the three TLD’s were placed in a plastic housing one meter above the ground.

In 1987, the Harshaw TLD system was replaced with a Panasonic system to increase precision and sensitivity. The Panasonic UD-814 TLD used a single element of Li$_2$B$_4$O$_7$: Cu (copper activated lithium borate) and three replicates of CaSO$_4$:Tm (thulium activated calcium sulfate) elements. The Li$_2$B$_4$O$_7$: Cu was shielded with 14 mg/cm$^2$ of plastic and each element of CaSO$_4$:Tm was shielded with 1,000 mg/cm$^2$ of plastic plus lead.

Daily quality control procedures were followed to assure proper performance and calibration of the NRD instrumentation used to read the TLD’s. Semiannually, the system was calibrated and all TLD monitoring was conducted in accordance with the recommendations of the American Standards Institute Standard N545-1975 (ANS175) and the U.S. Nuclear Regulatory Commission Regulatory Guide 4.13 (NRC 77).

The Panasonic TLD is still in use with Global Dosimetry Solutions Inc., providing readings to DRI.

- Recording microbarograph for measuring and recording the barometric pressure.

  **Recording Microbarograph**
The PIC was sufficiently sensitive that it detected variations in the ambient gamma radiation due to changes in the barometric pressure. As the barometric pressure decreased, there was a corresponding increase in the terrestrial emanation rate of naturally occurring radioactive gases (primarily radon and thoron) and vice versa. The recording microbarograph was included at each CRMP station to document the correlation between the barometric pressure and the changes in the PIC gamma radiation exposure data.

Currently, electronic barographs are used at all of the stations. The old type barograph is still in use at many of the stations as a back-up. The older barographs display the pressure trends and have the advantage that they can be viewed at the stations by the public. The CEMP web page displays the trends from the electronic barographs.

In the mid-90s, meteorological equipment was added to a few of the stations. Around 1999, meteorological equipment was installed at all existing stations and at stations that has been installed since then on any new stations.
Two men brought a concept back to Nevada out of their involvement with the 1979 Three Mile Island (TMI) accident in Pennsylvania. It was an idea that would grow, develop, and eventually become the Community Environmental Monitoring Program. Those men were Bruce Church of the U.S. Department of Energy and Charles Costa of the Environmental Protection Agency. With the invaluable assistance of Nate Cooper of the Desert Research Institute, they created a program that became, perhaps, more than any of them had imagined. In this section, each man tells the story from his personal perspective.

Bruce W. Church – U.S. Department of Energy

Bruce: I’m glad you gave me some warning because it’s given me an opportunity to think about why the program began and what were all the things that led up to it. That’s what caused me to reflect back on my career and where I was and what I was doing because I’ve concluded that it was the culmination of my exposure to different events and activities that led to the genesis of the program, CEMP.

Question: How did you become involved in radiation monitoring?

Bruce: My affiliation at the Test Site began in 1961. I was an employee of the U.S. Public Health Service. I began here in town at their radiation chemistry laboratory and, after several months, I was transferred to the Test Site where we did just routine environmental monitoring because there was no testing going on. It was during the period of the test moratorium. A few weeks, maybe a month, after I went out to the Test Site, it was enough time that I’d had a chance
to cover the Test Site and change a lot of air samples and analyze that data and it was very boring
data. It was all background.

Then the Russians broke the moratorium and that network of air samples that it was my
job on the Test Site to collect routinely and then analyze started seeing an increase of
radioactivity. The Russians tested about the first of September of 1961. The United States
prepared and tested about two weeks later on/about the 15th of September. During that
preparation period, my Public Health Service supervisor came to me because I was a native of
Southern Utah, and a Dixie College graduate from St. George and they had seen me with my
letterman jacket. I had played sports for Dixie College, that’s why I had a letterman’s jacket, and
they asked me to be involved in the re-establishment of the film badge program around Southern
Utah, Washington, and Iron County and then Lincoln County in Nevada.

They thought that my presence wearing my letterman’s jacket would be a friendly
encounter and indeed it was. I had no problem getting into the people’s offices because many of
these people were prominent people, like the sheriff of Washington County and President of
Dixie College where I had just graduated from. The first question he wanted to know from me,
because he knew me, was “why aren’t you in college.” I told him that I was taking a little time
out but I intended to return, that was his first question. And that is a sidebar story because that
was Arthur Bruin, who later died from cancer. His family became vehemently anti-Test Site and
fueled the down-wind program a lot, which is a big player in this story.

That was my first encounter with the off-site public. It was during that period of time as
the AEC ramped up the underground testing program. Then, it was time out for me for a number
of years because I went back to school after a year at the Nevada Test Site. I went to the
University of Utah and Colorado State University, where I encountered quite a bit of opposition
to the testing from some of my professors and instructors at both those institutions, which also shaped a lot of my attitude. I came to learn that a lot of people misrepresented a lot of facts.

Question: What happened after graduate school?

Bruce: After graduate school in 1966, I returned to the Test Site and went to work on the nuclear rocket development site, which, for a recent young college graduate was really exciting. We were planning, as a collective entity, a manned mission to outer space and to do that we needed nuclear propulsion in order to make all that happen. So, it was very exciting. But the change of administration killed the program. So within three years, three and a half to be exact, I took a position at the Atomic Energy Commission, and that was 1969. By 1973, I found myself basically the lead Health Physicist for the Atomic Energy Commission. I was promoted to the Chief of the Radiological Branch. That group grew and, in 1980, was made a division and I was made that division head.

During that period of growth, from 1973 to 1980, when the division was created, a lot of things happened. AEC in 1974 was changed to ERDA (Energy Research and Development Administration), and in 1978 ERDA was changed to DOE. During that ERDA period, there was considerable activity in the off-site among the so-called “down-winders” and also the so-called “atomic veterans,” people who wore uniforms and participated in tests at the Nevada Test Site and Pacific. I found myself supporting the ERDA officials in headquarters at a number of congressional hearings and, if I wouldn’t have been in the position I was in at ERDA at Nevada Operations Office, I probably would not have done that but I was the supervising Health Physicist. I was basically tapped to do that. What an education that was for me. I not only had
the opportunity to confront and prepare a lot of inquiring questions from the congressional staff and the congressional people, but it gave me an opportunity to really examine the record, the Test Site record, of monitoring and deposition of fallout, dose construction, dose to people and all of that historical aspect of what had happened in the past that I probably would not have had an opportunity to do. That shaped a lot of things to come in the future.

One thing became really pressed upon my mind during the tenure at the University of Utah, as I saw major professors take AEC/ERDA to task. I saw the events played out in the press as I watched standing in the background. Statements were being made to television reporters that I knew weren’t true from some of these people because I was involved in making the environmental measurements and working up the data, collecting the samples. I heard these statements made and I was saying “that’s not right.” The same thing was happening as I faced Congress and a lot of rhetoric and things happened to lessen the record being correctly and factually represented.

Also, I had an opportunity to be involved in legal action during these same years. There were a lot of things going on. The whole anti-exposure to radiation movement really, really gained a lot of momentum. Fostered a lot by Governor Matheson of Utah, who challenged ERDA, the DOE, saying that they were hiding behind classification and hiding behind records that nobody else had access to. Well, the charge that nobody had access to records was true. The classification was more rhetoric than true. Things were classified for a very good reason. But, there was lots and lots of information that was not classified, but they were in government files, which had been archived, and government reports and not really accessible to the public.

Question: This was before the DOE openness initiatives?
Bruce: During the course of congressional hearings, DOE committed the DOE management to making documents more accessible to the public. I was part of the witness team sitting in front of the congressmen. However, I personally did not make this promise because I was not in a position to. I was really a person to answer technical questions. But, the DOE headquarters’ management officials, as they were challenged by the Congress for access to this information, committed to making an improvement to that condition. As a result of that, the Coordination Information Center (CIC) was born.

We came back to Nevada and put together a proposal for the headquarters that basically amounted to a significant venture to go around the whole AEC/DOE complex and copy all of the records we could find that spoke to nuclear weapons testing, and particularly fallout and exposure to people and all of the environmental monitoring that was done and gather that information and bring it to a central location in Nevada and make an organized bibliographic database available to the public, which still exists. In those same years, Three Mile Island happened. I was also involved in that. It was an incredible period of time. And, that led to a lot of public awareness and public hype. It was really a period of time where the whole public was churned up with respect to having been, or potentially being, exposed to radioactivity as generated either from testing at the Nevada Test Site or from power plants.

Question: Were you always with DOE?

Bruce: My beginning years were with the Public Health Service. So, I was very much aware and even assisted, as I mentioned, in establishing some of those early networks as we began
underground testing in 1961. And, throughout that first year, as part of my job, I collected a lot of off-site samples and was more intimately involved in measurement and calculating the data and so forth inside the laboratory. So, I really knew what was happening with respect to the environment.

I also was very much aware of the contact that was made by Public Health Service field personnel with people in the communities. Then, in 1970, when, I think it was President Nixon who created the Environmental Protection Agency, I saw that change and saw the mission change from what the Public Health Service was, which was really more of a people-oriented protection mission, to an environmental protection mission. And, I knew the people, one of the key people you’ll interview, Charles Costa. He and I actually roomed together at the NTS. In those beginning years, we became good friends clear back to 1961. So, as we have risen in managerial positions, him through the EPA and I through the AEC/DOE chain, we were very much aware of what was going on in both places.

Question: You mentioned litigation earlier. How did that unfold?

Bruce: In these same years, there was a large number of claims filed with the DOE. This was in the 1978 to 1979 timeframe. From the down-wind community, hundreds and hundreds of claims started trickling in and I was invited to come back and start reviewing those claims and became part of the group that developed policy on what to do with them. This evolved into sort of the classical government legal position, which was that they were going to let the claims “ripen,” which means that they have reached automatic government milestones and ultimately would possibly lead to litigation, rather than try to just answer each claim.
We found ourselves, in the 1979-1980 timeframe, starting to prepare for major trials and a number of major trials started to happen simultaneously throughout the complex. That became such a potential burden that a number of attorneys became involved and their concern was they didn’t know anything about the technical aspects of radioactivity and dosimetry. So, we began holding schools here at the Nevada Test Site that would bring in attorneys from all over the complex and put together a faculty of very prominent people to help them become educated and understand the facts and the doses that really happened so they could properly defend the government and its contractors, particularly the national laboratories.

Subsequently, legislation was passed, and Congress began protecting those contractors, specifically, the national laboratories, basically deferring everything to the government as the defendant, which made a lot of those superfluous lawsuits go away and a number of them got rolled into the government as the primary defendant. There were a number of major trials that took place around the country, which is also another side story that has been somewhat told in various formats. I was very much involved in the down-wind lawsuit that took place in Salt Lake City, where 1,200 claimants were joined together, not as a class action, but as a bundle of individual claimants. And, the two sides chose to select I think about 23 plaintiffs that sort of crossed the spectrum of the different types of claims, and that trial was held in 1982. So, during these same years, there was this build up, preparation of a lot of depositions and interrogatories.

Question: What did the interrogatories consist of?

Bruce: Interrogatories are an opportunity for both sides to ask all the questions they want to of the other side. It’s an inquisition, a fact finder. And, so there were pages and pages of questions
and which led to boxes and boxes of material. We ended up again, in this same timeframe, creating within the contractor, who was putting together this huge database of information, a litigation support team, an actual team who was funded to deal with this massive accumulation of documents. All of this affected me as I became aware, acutely aware of the disparity between what the public saw as an image of what happened and what they believed the potential harm of radioactive exposure was. What I understood to be or what I thought and still believe to be the truth, and there was a gulf between us, a lot of fear and concern based on very small exposures that people really shouldn’t have a lot of concern over.

That gulf exists today in a large degree and you see it exemplified when you try to deal with issues like Yucca Mountain and issues of transporting low-level wastes in this state, as well as the adjoining states, that gulf is still alive and well. While all of this is going on, Three Mile Island happens, huge aftermath. Because of all the things I was involved in, it gave me also opportunities to be involved in some of the examination of what happened in Three Mile Island, meetings actually at the plant, as well as subsequent seminars and symposiums that talked about what happened.

Question: Would you describe what happened at Three Mile Island?

Bruce: One of the things that happened during Three Mile Island is that our team here in Las Vegas (EPA) with all of its capability to do off-site monitoring was given a mission at Three Mile Island to set up what amounted to community monitoring stations. They set these out to be quite visible with the public. Well, I didn’t know that. I knew that our people, you see, we funded these Las Vegas people from the DOE contract and that made us generally quite aware of
what they did, particularly if it was outside Nevada. All the hardware was DOE’s but, DOE was very much involved in the Three Mile Island thing, too, and I don’t think anybody even blinked at the fact that DOE equipment was used by the EPA there. Probably, outside of the local EPA and DOE folks, nobody else knew that.

I knew they were there, but I didn’t know what exactly the program was that they put in place, so I went to a symposium. And, at this symposium, I heard a third party—a man that I really respected because he wrote the textbook I studied in graduate school on radiation physics, Ralph Lapp discuss the community monitoring. Ralph got up—a very distinguished, well-known throughout the country and the world individual—and started talking about the community monitoring program. He made a couple of points that really rang a bell with me. He made the point that the equipment was set up on individual residences or in community locations like a city office, someplace like that, and that the equipment was operated by a local individual to give credibility to the information that was being generated by the station. Those individuals were also trained and tutored in how to run them. It was after that particular symposium while coming home (I had been worrying about, from all these other experiences, how to deal with the public) that it occurred to me what we needed to do around the NTS.

Question: Was your experience at Three Mile Island the main reason for the community monitoring?

Bruce: One of the reasons I wanted to talk about and look at this was because it was in that same timeframe, that a test named Riola, about September 1980 released just a puff of radioactive gas. This gas blew off the Test Site and was detected with our aircraft, which is the only way we
could even see that type of gas. But, it caused such an uproar that some radioactivity got off the Test Site from underground testing that it was unbelievable to me. Chuck Costa and I, as a team, went to every one of the contiguous four western states to the Test Site, and briefed their state radiation health people, governor’s representatives, and anybody else that wanted to be briefed. We went to communities, we were on the road for months, briefing people on exactly what happened, showing them the data.

Within this same timeframe, the symposium, the testing and recognizing that world events were dictating to us that we needed a vigorous underground test program. We knew there would be, and there was, lots of resistance, lots of people at the guard gate demonstrating against underground testing. A lot of this, and the congressional hearings in 1979 and 1980, those few years were just packed with this kind of uproar about a little bit of radioactivity that might be coming off the Test Site as seen by me, little is my adjective. And, it concerned me. How in the world, after all these years, do you break in and try to develop some credibility with the components around the Test Site.

Then, I was exposed to this report on what happened at Three Mile Island and how well it was accepted by the public. So, I approached my boss and, another thing that may seem like a really small thing, but wasn’t in the hierarchy of management at DOE, because of what was going on a lot, the manager, Mahlon Gates, in a reorganization, created a dotted line from my office directly to his office, bypassing my assistant manager, his deputy. He explained this and said that “I want to be able to talk to Church directly without anybody misunderstanding so there’s this dotted line and we’re going to talk to each other.” That was my paraphrase of what he said in this reorganization announcement.
Question: So Gates supported the monitoring?

Bruce: Without that support, I’m not sure a lot of things would have happened because there was a lot of resistance to radiological safety within management and on the Test Site and there was no question about this. But, this changed and the organization gave me an open door to the boss. So, when I had an opportunity to see and hear and feel all these things going on and come back from that symposium. It was within just a few days of coming back from that symposium, I walked into his office and said “Mahlon, here’s something we need to do to try to help us with our off-site communities. We need to devise a program similar to what was done at Three Mile Island and put it in charge of the communities to give us some credibility out there.” Backing up and explaining a little bit about Public Health Service and EPA. The Public Health Service was a great defendant of the AEC because they were really partners. When it became EPA, EPA was really more of an auditor and not much of a defender. They wouldn’t really defend and go to bat too much, as perceived by us in DOE, because of their role as more of an auditing, watching kind of thing, which had some good aspects as well as negative aspects.

We brainstormed that day what we might do. One of the things I said we need to do, and it was out of this concern that EPA is not going to go out there and we have to change that program to where we have someone more independent than either one of these government agencies doing something. That’s when we struck on DRI. And, we said we need to have some other independent organization, basically, hire the people and manage the people who are going to run these stations, provide the expertise and the equipment.

Question: The program had three participants from the beginning?
Bruce: Out of that brainstorming session, a number of meetings were held. We met with the EPA, we met with DRI, and we started formulating sort of a tri-partite program. Some of the things we needed to do was not only put instrumentation out to the public and have them understand, but we needed to get officials from DOE out in front of the public, let them explain the program and let them take the hits we knew would be there. So, we put in time working with DRI and EPA and put together a program that came to be known as the Community Radiation Monitoring Program. That was the initial program.

We tasked DRI to go to each one of the communities around the Test Site and interact with the Chairman of the Town Board or the Mayor, whoever the entity was that had the local authority, and get them to nominate a Station Manager, and they did that. And, in discussions with EPA, we debated what kind of monitoring station we wanted to fund and build because this program did not come without cost. In those discussions, we came up with the basic plan, which evolved with time into the station that you now see out in front of DRI and around the complex where we chose various kinds of equipment. That’s when we really bit the bullet and bought what’s known as a pressurized ion chamber, they’re expensive, about $10,000 each, even now. We felt we had to have good reliable instrumentation that could be recorded and that we could train people on.

As soon as that initial batch of Station Managers was chosen, we went to another independent entity, Dr. Gary Sandquist at University of Utah, and asked him to train these people. So, he put together a course and that initial training took place at his facility on the campus of the University of Utah. Then we started, once we had the training done, the stations in place, holding community meetings. The initial thrust of the community meeting was to
introduce the Station Managers to the community and also brief on the monitoring program at
the Nevada Test Site as operated by DOE and its contractors. So, we put together a road show of
briefings. I think I personally participated in about 45-60 community meetings over the course
of the next few years. But, that’s how we got there.

Question: The first monitors chosen were science teachers?

Bruce: We recommended science teachers but not all of them were. As we held our planning
meetings, which largely took place either individually or collectively with DOE, EPA, and DRI,
the idea evolved that we needed somebody with some basic technical knowledge to even have a
prayer of understanding our training. So as DRI went to the communities, they took with them
the consensus of our planning group that said we recommend that you go to your local high
school science teacher and request they become the potential Station Managers. Well, there were
communities like Goldfield that didn’t have a high school and there was one or two other small
communities like Rachel, for example. Rachel, Goldfield, and Shoshone, California I think we
ended up with a schoolteacher. I don’t know that they had a high school. But, by and large,
most of the stations were represented by a science teacher of that high school in that community,
Alamo, Ely, Las Vegas, St. George, Cedar City, Tonopah, Indian Springs, all had high schools
and so they furnished that initial group. That’s how we started.

After that initial training, we became aware that we needed to have periodic updates. We
initially started with six months and we had training here in Las Vegas during the winter for a
day or two. Then we’d go for about a week outside of Las Vegas in the summer. And, we had
one summer meeting here in Las Vegas but folks just didn’t like it. It was so bloody hot, people
didn’t want to come. And, I think we only had one meeting in Ely, which was rather unpleasant, but then we had one meeting in Brian Head and loved it. And, I think we went back to Brian Head every summer after that.

Question: The first communities that were chosen for monitoring stations, were they chosen based on the path of that puff you referred to?

Bruce: No. They were chosen because they were the closest community and we wanted to ring the Test Site. And, we felt even though we had a station in Pahrump, which was right in line with California, we wanted to include one station in California to have California represented. So, California was more for a political reason than a technical reason to have them join. But, all the rest of the stations were to form a ring. Now, you can look at the map of the ring and question why we skipped Enterprise, Utah, and went to Cedar City. Well, the answer is that Enterprise was so far out and so close to Cedar City and Cedar City being the largest population center that we thought we’d get a bigger bang for our buck to be in Cedar City than Enterprise. Why did we go so far out of Ely when we had stations at Alamo and Rachel, because it’s going to hit both those stations, looking at the same reason. Population centers in that predominantly northeast corridor were the favorite aiming sites and for a lot of reasons. We just felt that that was a good political move to have one in Ely. We later picked up a station at Caliente and Pioche a little bit for the same reason. We initially had a station in a little town due west of Ely, Austin. But, that only lasted a few years as we had a difficult time maintaining personnel at that location. So, there were some changes to the initial first number of stations and there needed to be changes.
Others can tell you probably about the changes that took place throughout the years.

With time, by 1984-1985, I was the Deputy Assistant Manager and then by 1987 I was the Assistant Manager and now I had other people with more hands-on in the program even though I have always had a pretty heavy hand on the community monitoring program for the reasons you’ve just heard. But, I put others in charge of the day-to-day activities. Probably the only other thing that I influenced strongly was the program direction when we stopped testing in 1992 and there was some mood to disband the CEMP.

Question: What direction was that?

Bruce: Again, reflecting on my experience in the off-site area, during the period of the moratorium, to try and re-establish something that had been disbanded immediately when testing ceased in 1958 was a lesson learned. Believing that the CEMP had done some good given the number of people we had contacted and the number of town meetings we had had held, giving an opportunity for the people in the communities to vent their frustrations and anger towards DOE, it would be rough to let it die. The people never had that opportunity until we started having the community meetings. Some of them were flat out hostile because of what, I believe, was a gross misunderstanding. And, that misunderstanding still largely exists. All we have done, I think, with the program is put a few drops of water in an ocean.

The sort of feeling I get is that we had an impact, an impact that’s difficult to measure. The closer people are to the exposure of the community monitors and the equipment and the results, the more impact we’ve had. We have done an immense amount of good. And, it’s exemplified by a lot of the experiences that took place in St. George with Jack Heppler, who was
the Station Manager. He was at the high school; he has now been at the college for a number of years. But, he related to us that on a number of occasions the city management people (the mayor and the actual City Manager and other people involved in management of the city) people would call and ask these kind of questions: I would like to move to your area, but I’m afraid of the fallout in the soil. I’d like to grow a garden, can you tell me about it? Or, we want to come and make a movie in or around St. George, but we’re afraid, our technical crew is afraid. And, that all stems from the filming of “The Conqueror” and then the subsequent deaths of John Wayne and the leading lady, Susan Hayward.

Question: What happened with the filming?

Bruce: Wayne and Hayward both died from lung cancer and both smoked. But, there was a lot of media coverage and blame on fallout being the cause for that. The basic problem for that claim is that there was no testing the year they filmed it. So, the only fallout that could be present in Snow Canyon, where I’ve been a number of times, would be from anything that happened in years previous. And, the only event that really put significant fallout in the Washington County area was in 1953.

I actually did an interview for a television station from somewhere in the country. They took film of Snow Canyon and actually had me talk as I walked through the sagebrush telling them about that era and the filming of “The Conqueror” and why for technical people like me it was a no-brainer to conclude that testing had nothing to do with it because it was a year apart. In those early years, most of the odd years saw testing in Nevada and even years testing was done in the Pacific. So, they’re the same people who were involved mostly from the laboratories they spent
1954 testing in the Pacific and they’re back at NTS in 1955, 1957, and then they tested in 1958 also. But, that was, I think, because of the pending testing moratorium.

Question: Why did you decide upon fixed stations?

Bruce: Right from the beginning, there were fixed stations, mainly because of power requirements. We didn’t have the kind of technology we have today to be able to put up solar cells and have monitoring instruments that could run *ad infinitum* based on recharging of a battery. We had to be close to power sources, and that’s specific to operating the air sampling stations. So, the Public Health Service actually assisted some ranchers in running some power because these things are very noisy and you couldn’t run them right near the ranch house where they live. You had to get them far enough away that people could at least sleep and live. So, at some costs to the government, at that time, they actually would run extensions so we could put these air samplers in place, and the same thing is true with the urban stations. You needed fixed places and fixed people to be able to see from event to event what was happening, what was going on. So, you could build the database that shows what really happened from the fallout, that it was dispersed.

There was a lot of mobile monitoring done, but it was done, generally, when the event was taking place. EPA and, before them, the Public Health Service and others, if you go back to an earlier time. Organizations mobilized a great number of people that were mobile in pick-ups and would have generators that would run for a few hours to collect air samples. But, to be able to run an air sampler 24 hours a day, day-in and day-out, you had to be pretty much at a fixed location. So, logistics, I think, dictated a lot of that as well. When we were influenced by what
we saw happening at Three Mile Island, we very much wanted a fixed station because we wanted them in a very visible place. We typically chose high school campuses where the stations and people would be very visible. If we didn’t have a high school campus available to us, we’d put it at the City Hall. In Overton, it’s at the public library and where the community center is. We tried to put them in very visible places like that.

Question: Was public exposure the only reason visibility was important?

Bruce: We’re very concerned when we start putting out these expensive stations because these stations are now starting to cost $20,000, $30,000, $40,000. We were very concerned about vandalism. And, I think much to the credit of the program and to the communities that has not happened. There has been some. There was some that happened on the campus of the University of Utah. Some of the vandalism that we experienced was protest; other was just pure vandalism. But, by and large, it has not happened.

Question: There are several ranch stations in the program. Were ranchers more opposed or more enthusiastic about being involved in the program?

Bruce: There was only one or two ranches that I think we kept in that early program because they were at strategic locations where EPA needed to keep an air sample going. We did not make them into full-blown stations because of the expense and the lack of visibility and the lack of public payoff, but we did keep some air samplers operating, that’s my recollection. We were after, with the investment of this expensive program, public visibility. And, some of the
individuals that ran some of the air sampling stations for EPA, were changed or whatever. There were a few of those. But, we changed really the focus of the program from just having stations out there to collect technical data for us as we looked at the whole impact of testing to one of trying to be visible in the community and being able to convey information and to answer questions and being very visible to the community, which was a whole different tactic to what we had previously done. I think we always had very excellent relations with the individual ranchers and people in small communities that changed air samples for Public Health Services and EPA and did for years and years and years. And, they were just excellent in terms of their relationship with Public Health Services and EPA in terms of doing that. But, the program really took a significant change when we tried to make it visible to the community as opposed to just having a station in the town.

Question: What was the first instrumentation like?

Bruce: It is pretty much today like it was then. The only significant difference is the addition of the atmospheric monitoring equipment. We had barometric pressure right at the beginning, we’d track that because that was important to environmental monitoring, in that you could have changes in atmospheric pressure that would increase the chart that people could see because, when atmospheric pressure is low, you have more radon that comes out of the earth so the background can go up. When you have a very sensitive instrument like this pressurized ion chamber, especially when it’s set down in the low ranges, you can detect that kind of difference. We wanted to correlate and be able to answer people’s questions: “Well, we saw the meter go up today, how come?” “Well, it’s because the atmospheric pressure went down.” So, we wanted
to be able to do that right from the beginning. So, it was only things like wind speed and temperature, and stuff like that, humidity maybe, that DRI has added since they’ve been able to do the hands-on equipment management.

The one common thread through all of the program changes is that right from the beginning, the AEC and its successor agencies have fully funded offsite monitoring and provided some management oversight, even though in those early years, it was almost none, it was just sort of how much budget do you need this year. Later on, that changed, especially as we started up this program and got DRI involved. My office and the DOE became a real significant player, whereas AEC let EPA run it. But, the thrust of that was not as much as it wasn’t criticism of EPA as it was criticism of us, DOE, because we had hidden behind these other agencies much more than we ever should have done. That was one of the things that I’ve picked up clear back in 1961.

When I was raised up through the Public Health Service program at the beginning of September 1961, I visited a woman in Pioche or Caliente, and she was still mad because in 1953 or 1955, people representing the Atomic Energy Commission had come to her ranch home and asked for a sample of her elderberry jam to test, taking it back to the lab for measurement, to see if there was any significant fallout. And, they had made a commitment to tell her what the results were, etc. She was still mad in 1961 because they had never followed up and I didn’t blame her. That was something that I had encountered frequently.

As I’ve explained, through the Public Health Service and EPA, we always did have community monitoring going on, air sampling, and other kinds of sampling, milk, water from many sources, wells, and meat. I participated in various programs, when I was in the early Public Health Service, sampling every kind of environmental entity. One of my weekly chores,
as I commuted a number of months from the Test Site to Southern Utah in my young life, we were only 20, one of my chores was to pick up milk samples in St. George from the dairy, manure samples, soil samples, and a whole myriad of that kind of stuff that I personally collected and brought back to the Test Site and put in the laboratory for measurements. Other elements of the Public Health Service were sampling everything in the environment including food from school cafeterias. Samplers would go through the school cafeterias, fill up trays like the typical student would and then place it in containers for shipment to a laboratory in Las Vegas where the meals were blended up and measured. So, there was a lot of monitoring that took place.

Question: It just wasn’t shared with the public, was that the main difference?

Bruce: Well, it was not hidden because it was published. It was published in public documents by the Public Health Service. And, during those early years, there were annual hearings in front of the JCAE (Joint Committee on Atomic Energy), one of the historic, very few, joint committees between the Senate and the House. When the Atomic Energy Commission was formed in 1948, Congress created a joint oversight committee called the JCAE to oversee it, because it was so important. There were hearings every year in front of that joint committee that would cover all the down-wind environmental monitoring. So, it’s a matter of public record. But, I’ve got to tell you, congressional hearing records are not very accessible to the general public. You’ve got to want it and go get it. Then, you can. So, the information was never hidden, but it was not in the city library, probably, even though it might have been.

Question: Why hasn’t there been more involvement with Native American groups?
Bruce: There were attempts, and I attended a public meeting that was held on the Shoshone reservation in Duckwater, Nevada, which was poorly attended. I think that was the only time we actually went to a Native American group and tried to put on that program. I think that’s in their record. We made, through other programs, more serious attempts to get them involved, never with much luck.

Another thing that was going on that I haven’t mentioned, during this same period of time, was the reexamination of the offsite testing. It was conceived by the pending litigation. The trial that was shaping up stemmed from the claims in the late ‘70s. As it started to proceed and we began to prepare for it, during the early ‘80s and the subsequent compensation legislation that happened throughout the ‘80s and early ‘90s, the need for reexamination became clearer. At the same time, we were approaching Washington with the plan to accumulate information to create the Coordination and Information Center (CIC). We also approached them with the plan to re-visit the technical data and re-do the dosimetry. So, the program that sort of put both these under the same umbrella was called ORERP (Off-Site Radiation Exposure Review Program) which began in that same timeframe, 1979-1980. This program lasted for about 10 years and I was the Project Manager for that.

Question: So, that was a DOE program?

Bruce: Yes. So, out of ORERP came the CIC and litigation support, which I’ve mentioned to you, and dosimetry reconstruction. This was all done in a fish bowl (very often) because we did it under the Federal Advisory Committee Act. We approached the governors of the four western
states and requested they choose two people to sit on the advisory committee, the state representatives constituted about half of the members. There was about 15 members on the committee and that constituted seven or eight per state because only one state, Arizona, only sent one person.

Question: So, when you say four western states, you mean?

Bruce: Arizona, California, Nevada and Utah. Then there were another seven or eight scientists that we chose from around the nation that were prominent in the field to help advise us. Those meetings were held with public notice, held in a public place and offered public participation. We got a trickle of people to come forward and make comments. And then, generally, it was in the form of a protest when they did. It was highly technical because we were talking about all of the vagaries of measuring fallout and atmospheric conditions and soil conditions and the technical aspects of ratioing isotopes in fallout and how you constitute the signal that Nevada fallout registers on top of worldwide fallout, the discussions were very technical. So, I’m not surprised that we didn’t get a lot of public comment. And, the idea was to have the public represented on the committee, anyway, with the governors appointing knowledgeable people in their own states. And, generally, what they did was to appoint a knowledgeable scientist and then a medical person, a knowledgeable medical person. They did a pretty good job.

As part of the dosimetry reconstruction, we went to a number of Native American people. If the dosimetry was to establish lifestyle, we needed to know what kind of structure people lived in, we needed to know how much time they spent in there, we needed to know what kind of foods they were eating during the various periods of time, and when they were indoors or
outdoors. There was a whole multi-page questionnaire that we wanted to use to find out information. We tried to approach some of these close in Native American groups because they were really the only ones affected to speak of and we primarily focused on the Paiute group in Southern Utah and Southern Nevada. We got almost no information as they really didn’t want to participate with us. So, I can’t offer a lot of encouragement from that angle.

They’re very anti. They come to public gatherings, especially if you hold a Yucca Mountain meeting, or if you hold a low-level waste meeting. I frequently will see entities come there and protest. But, it’s a very general, you’re messing with Mother Earth, you shouldn’t do it, you’re on our lands, and get off our lands, type of protest. It’s really been settled years ago with the Ruby Valley Treaty. They constantly bring it up and it’s been satisfied in front of the Supreme Court years, and years ago.

As testing stopped in 1992, there was pressure to cut the CEMP program to the point of termination. I resisted that and, at that time, we changed direction a little bit and actually renamed it. It became more of a community technical liaison program. Because I firmly believed that liaison needed to continue because we didn’t know, we could not forecast the future. If we knew in 2002 that there would never be another test, we might have done something different. But, I was greatly influenced by my experience of the past. And, I was now in a more powerful position to influence the program as Assistant Manager than I had ever been. So, I really strongly prevailed that the program continue even be it with a little different mission, that the technical liaison needed to continue with the communities.

Thank goodness, I think, successors have been able to see the value of that. Because other programs have become more prominent, like the transportation of low-level waste. And, I’m not even talking about Yucca Mountain, because this program has never really done
anything in or about this, even though I think it should and could. But, a DOE program that
heavily influenced a lot of communities, and just about every one of them, because by the time
you look at all the routes that low-level waste goes through, just about every one of these
communities sees a shipment or could. So, just from that aspect alone, I continued to believe
that the technical liaison and monitoring needs to continue. I think the federal government owes
that to the communities. I really do. I’m very convinced of that. I think we have a huge fence to
repair that was really torn down in the early days. And, it wasn’t until 1979, 1980-1981, that we
started to repair that public relations fence in any kind of significant way. So, that’s why I say
you almost have to understand my career to understand the passions and the beliefs that evolved
in my mind as I got into positions to influence this program and how it changed a lot. I think the
American public is as ignorant about radiation effects today as it was in 1950, 1960, 1970, 1980.
I think, as long as DOE is shipping low-level waste and even has the semblance or pretence that
they may go back to testing, this program should stay intact.
Charles Costa – U.S. Environmental Protection Agency

Question: How did you first become involved with the community radiation monitoring program?

Chuck: You have to go back even further than that. You have to make it clear that life around the Test Site did not start with the community monitoring program. It started back in the early '50s when the U.S. Public Health Service had the monitoring and safety responsibility by virtue of a Memorandum of Understanding with the Atomic Energy Commission. It started in 1954 and in those days they were conducting atmospheric testing, but on a campaign basis. It wasn’t on an all-year-round basis, and so in those early days, Public Health Service reservists and others came out for these campaigns and set up air samplers and other types of monitoring equipment around the Test Site. That’s kind of the way they operated for the documentation and for emergency response for years, at least during the atmospheric testing days.

Then there was the moratorium from '58 to '61; no testing was conducted. When we resumed testing, we went to an all-year-round testing program, but mostly underground testing up to '92. The Limited Test Ban Treaty was signed in '63. When the U.S. resumed testing in September of '61, it was at that time that the Public Health Service built up their work force in Las Vegas and here at the Test Site and started setting up a permanent monitoring program around the Test Site. It consisted of setting up air samplers and gamma ray recorders and putting out film badges in those days and so on for an all-year-round type of a monitoring program. In those days, you put an air sampler at a ranch house or at a gas station or something like that and basically you pay the people for the power and so on, but the PHS guys did the changing of the samples. They brought the samples back to the lab for analysis.
That’s the way it continued for a number of years, this permanent sampling and monitoring network. In fact, the network extended all the way across the western United States. It was quite large. And I was part of that when I came in 1962. So there was no community monitoring program at that time.

And then Three Mile Island occurred in 1979, March of ’79. It seems that all of the accidents happened in March. I think the 8.0 Alaska earthquake was in March, Three Mile Island occurred in March, the Exxon Valdez accident occurred in March. I was born in March. That’s another disaster. I participated in Three Mile Island and I was on the Exxon Valdez oil spill, too.

Several people and I responded to the Three Mile Island accident. In fact, we were at Three Mile Island the day after the initiation of the problems. We started setting up the sampling and monitoring program around Three Mile Island basically the same way as at the NTS. You went out, found a place that would accommodate an air sampler, a gamma ray recorder, dosimeter, whatever. But, the troops from Las Vegas then changed out the samples.

Question: You were there with Bruce Church?

Chuck: No, Bruce Church wasn’t there initially. He was involved later. We were there for a few months and that’s the way we conducted the monitoring program around Three Mile Island. It was clear in those early stages that the people still had difficulty believing in what the government was telling them. There was a lot of misinformation getting out, but that’s the way the monitoring program worked for several months. I think it was in January of ’80, with the beginning of the purging of the TMI containment vessel (Krypton-85), that it was felt that we
really needed to communicate better with the public. We needed to get them involved with the monitoring program and provide the results to them so they felt like they’re part of the program. Then their neighbors also felt like, hey, we’ve got somebody out here that we can trust.

That’s the way it was set up for the release of the noble gases from the containment vessel at Three Mile Island in, I think again around January of 1980. It was really the beginning of a community monitoring program around Three Mile Island. Here, around the NTS, we hadn’t started it at that time. It was still the old system. And so the state of Pennsylvania was involved, the DOE was involved, EPA was involved and especially, the community was involved. It worked pretty well.

So when we got back from that, went to DOE and Bruce and said, “Hey, this system really worked with Three Mile Island quite well. We ought to do something like that and have these super sampling stations set up,” which you would call community monitoring stations. And it was really Bruce that said, “Well, maybe we need to get other state agencies involved.” “EPA’s still a federal agency.” So that’s when he brought in DRI to manage the stations and the University of Utah for training. I’m not even sure who recommended to have science teachers as the station operators. It may’ve been DRI, may’ve been a combination of all of us thinking, “Maybe we ought to look at having science teachers run it, if there are science teachers in some of the communities.”

Question: According to Bruce, it was his idea.
Chuck: If it was Bruce’s idea, that’s fine. But like I say, the concept originated at Three Mile Island and it worked quite well. So, that was the beginning of the community monitoring program.

Question: Anita Mullen said you were the originator of the program, really. You were the one who really had the idea.

Chuck: The idea coming from Three Mile Island and bringing it back and saying, “Hey, we ought to do something similar to that,” but I think the actual format was really put together by Bruce and maybe even Nate in DRI. And I’m not sure what our involvement was. So that was the beginning and it turned out to be a pretty good program.

Question: You and Bruce were roommates?

Chuck: Yes, Bruce and I were roommates in 1962. I don’t know who told you that.

Question: He did.

Chuck: Yes, we were roommates. He was a student. He was a grad student, I think, at University of Utah and was working summers in Mercury for the Public Health Service. I came out from Massachusetts and actually lived here in Mercury, and the first guy they put me up to stay with was Bruce, in a trailer. Bruce is a Mormon, and a good Mormon. I didn’t know anything about Mormons. I thought Mormons were Indians or something. I didn’t know what a
Mormon was and I remember in those early days, in the summertime in particular, Bruce in the trailer would have this white gown. I’d have nothing on. I said, “Bruce, I mean, it’s summertime. It’s 90, a hundred degrees here. Why are you wearing all that stuff?” So it was really funny. Bruce is a neat guy and we spent a lot of time together.

Question: You were over the program for EPA?

Chuck: Yes, I was a division director for a number of years.

Question: Did you go out into the communities for some of the community meetings that were held?

Chuck: Yes, I did, in the early days.

Question: Do you have any particular reminiscences about the meetings? How about that one in St. George?

Chuck: At the meeting in St. George, we had a lot of adversarial comments. But, I can understand where they were coming from. I was involved in some of those early tests and, it’s funny, as you came closer to the Test Site, then there was a totally different environment. The people that we dealt with on a normal basis out here, the EPA, the Public Health Service, were quite patriotic. I’m not saying that the folks in Utah weren’t patriotic. But, the folks around the
Test Site were very supportive of the program and the fact that they saw us out there quite often, kind of believed that we were there to look after them, which we were.

We did not talk down to them. We talked with them often and always told them the truth. Even for example, when the monitors would go out for a test, the day before a test, to find out what folks were doing, they would tell them, “We’re going to have a test the next day,” even though it was not announced. No specifics beyond that. Yes, I remember some of those early meetings, but they were things that you just dealt with.

Question: Was this sort of the first attempt to counteract a long history of distrust of government?

Chuck: Yes.

Question: Was the DOE openness initiative part of that?

Chuck: Yes, in fact, I was telling somebody the other day there’s a lot of tours now conducted at the Test Site. A lot of the public have now seen the Test Site. Back in the early days when I started, through the ’60s and into the ’70s, it was a pretty closed site, especially to the public. It wasn’t until General Gates, Mahlon Gates, became manager that it began to open up. At that time, he had a deputy by the name of Charlie Williams. I took Charlie, along with my boss, Jack McBride, and a fellow from Los Alamos, John Malok on a tour around the Test Site, to meet the ranchers and other members of the public. And they had such a great time that Charlie Williams said, “Well, maybe we ought to bring General Gates out and let him meet some of the people.”
So we did that and General Gates thoroughly enjoyed it and the people thoroughly enjoyed him, to have a retired general, the manager of DOE. It was at that time that General Gates said, “Why don’t we bring the public in to tour the Test Site? Let’s tour them around, some of those people that I met.” And so really that was the beginning of the opening of the Test Site to the public just to show what we were doing, and it’s continued from there.

Question: Did you visit any of the ranches?

Chuck: I always got out to them. In fact, I still do go out there to visit some of the folks.

Question: Were you involved in choosing the communities that would get stations?

Chuck: Yes, we had some discussions, probably, with Bruce and folks on what would be strategic locations based on experiences that we’ve had with releases at the Test Site, where it would make sense to have full-blown stations. The winds here are generally out of the southwest to the northeast, so it makes sense to have good monitoring stations, most of your monitoring stations downwind, to the north and northeast, and then you want others around for public relations and background measurements and that sort of thing. Most of the places make sense from, like I said, where you would want to put stations in the event you had an accident from an underground test.

Question: I talked to a lot of people who were involved in the body counting and there’s not one person that didn’t think that it was a great thing. Anita Mullen was in charge of that?
Chuck: Yes, she was. She was an asset to the program. And she really cared about people. She dealt with a lot of the residents that came in for whole body counting and always treated them like real genuine folks. Yes, she did a good job. There was probably two or three generations of people in that program.

_Anita Mullen  EPA_

_Anita:_ The program began from Bruce Church and Three Mile Island and, of course, it was a good program to keep people informed. A little bit too late, though.

_Question:_ Do you think something like that should've been in place when they were doing the above ground testing?

_Anita:_ Oh yes. But, like everything else, they needed to get the job done and they did it. You look back on it now and say, “Ohhh, why did they do that?” But, there was a reason. Some of it was political.

_Question:_ What do you think having the monitors be people from the communities brought to the program?
Anita: Of course they were more trustworthy and people accepted what they had to say more easily. That was what the whole thing was based on, establishing trust.

Question: Anita said she thought it was a great program but she thought it was too late.

Chuck: Yes, I agree. Anita was right. As I mentioned, at the time we had monitoring stations and monitoring equipment around the Test Site even going back into the ’50s and the ’60s, but I think this format would’ve been even better to have if you started it back when we started up in earnest in the all-year-round testing program.

Question: Was the technology available then?

Chuck: Not as good as it was when we started the community monitoring program, because of the sensitivities of some of the different equipment. Just got better by the year, as other things get better by the year. But yes, pressurized ion chambers came on board and in fact that was something that the reactor folks started with, and I think we brought that back to the program.

Question: Did you see the program evolve through its various stewardships?

Chuck: I saw the program evolve over the years, from a very simplistic, basic monitoring program, to something like the community monitoring program where you had state-of-the-art
equipment and eventually telemetry. From that standpoint, yes, but as far as actually watching
the community monitoring program closer than that, no. asic monitori

Question: Do you think the goals of the program changed over time?

Chuck: I don’t, not that I saw from my end of it. The number one goal was always to get the
people and the public to participate more in the program, to make it more believable, to get the
best equipment out that we could, to get the best data you could to help with any emergency that
might come from any Test Site activity. The community monitoring program, especially with
the PICs and the noble gas samplers, was really quite advantageous to other incidents that
happened around the world, like Chernobyl. And, maybe some other releases from other
countries. So from that standpoint, there was pretty good reason for it.

Question: Did you ever participate in any of the training?

Chuck: I think I did go to some, a training class or two at the University of Utah, just to see what
it was like, but I can’t remember whether I participated in it or not, other than to say a few nice
words to the folks.

Question: Did public pressure from downwind communities affect the start and growth of the
program?
Chuck: Not that I could see. I always like to keep politics out of it. I always tried to base it on technical reasons to put a station somewhere, and how it was going to best serve the overall program. There was some public relations associated with it but those aspects were minimal. But in general, placement was more for technical reasons.

Question: When did you stop being involved with the program?

Chuck: I retired from the U.S. Public Health Service in ’92 and went to work for Los Alamos National Lab, and that’s what I’m doing now.

Question: Were you involved at all in contacting Native American groups?

Chuck: Back in the early days we used to have an air sampler near Duckwater and dosimeter film badges were issued to a few Native Americans. But for the community monitoring program, no. Duckwater is the only one I can recall that we ever did any monitoring around.

Question: What do you see for the future of the program?

Chuck: If we go back to testing, and I suspect we will one of these days, we’re going to need community monitoring stations out there. It does serve a good purpose even in this period when we’re not doing testing. Subcriticals don’t lend themselves to having that kind of monitoring around the Test Site, but just that people know that there is a Test Site, to keep up the good
public relations, in order to demonstrate to them that we’re not sneaking anything on them from what we’re doing here at the Test Site. I think it’s doing a good job.

Question: Can you think of anything else about the program that you’d like to share?

Chuck: Not other than the fact that I always enjoyed going around when I could, to meet the people, to talk to the people. That was the best part of the whole thing.

Question: Don James was talking about how you guys went out in jeans and boots, not full cowboy attire but, relaxed country attire. He said, “If we went out in suits, that’s it, nobody’s going to talk with us, nobody’s going to do business with us or let us put a station on their ranch.”

Chuck: There’s several guys that clicked with the off-site folks. He was one of them. Ken Giles was another. And there were a few others. They made me look good.

Question: Is it true that you told your people, “even if you’re done with your routes, don’t come back.”

Chuck: That’s right.

Question: They had to stay out there and talk to the people and visit with the people. And was that directly from you?
Chuck: Yes, that was my philosophy. To be out there where they could be seen, to talk to them, show them what we were doing. And I think it proved itself. It was worth the time in the long run. We could’ve had all kinds of problems here when we were testing, if people were really adversarial to us. It was guys like that that kept us going.

Chuck: Did you go out to the Complex 1/Garden Valley?

Question: I did, but Mr. Heizer wasn’t there.

Chuck: Oh, that’s too bad. He’s a character. And he’s got this massive, massive, work going on at the complex right now. I was there when he started the original one. And we couldn’t figure this guy. We thought he was a Soviet spy, and that he had all kinds of electronic communication equipment. But Mike is genuine.

Question: He must bring to the whole question of testing and monitoring such a unique perspective.

Chuck: Yes, he does. His first wife was deathly afraid of what we were doing at the Test Site, and she used to call me quite often saying, “I’m really concerned about what you guys are doing.” That’s probably one of the reasons why we set up equipment at the ranch, at the complex.
Question: Did you ever get any calls from anybody to ask you about the program?

Chuck: We got calls from the public and I used to try to deal with them one on one. I didn’t like to pass calls off to others. I wanted to make sure that they got the real story or the real answer, when it came to the public. I didn’t like when the public called and were passed from one person to another. I tried to get it right with them.
Nate Cooper - Desert Research Institute

Question: How did you first get involved with the program, what was your position and what year was it?

Nate: The timing was sometime very near 1980, shortly after the Three Mile Island event. You have probably heard this all before. Anyway, this is what I remember about it. Bruce Church and Chuck Costa came back from Three Mile Island. They had spent rather a lot of time there, trying to, among other things, assure the people that lived in whatever the town is that things were okay. The EPA put out monitors all over this town, and people would come up and say, “Hey, what are you doing and why are you here?” When that was explained, it seemed to relieve these people a little bit. That was the germ, I think, the seed of the program. Costa and Church came back from Three Mile Island with that concept.

I think they probably talked to Paul Fenske (DRI Center Director) about it, saying, “Hey, can DRI help? We are the federal government, therefore no one trusts us; we need independent assurance that you guys can perhaps provide.” One of the questions was, “What’s in it for us?” “We need to get something out of it, too. We’re not lackeys. We’re not going to spout the DOE line just because you say so, or because you give us a few bucks.”

That was the beginning of the discussion that turned into what was then called the Community Radiation Monitoring Program. As far as I’m concerned, it’ll always be called that. I understand how it’s evolved a little bit but I’ve not seen the new stations. I guess they’re quite different and probably better. Someone finally heard the plea to put up some meteorological kinds of things.
But, the summer of 1981, probably all of that year was spent planning, trying to put the
damn thing together. [To Marjory] Please feel free to interrupt. You were there.

Marjory (Marjory Jones (DRI) Nate’s assistant in the early years): I was there but I wasn’t
involved at that time.

Question: Could you talk about how the first communities were chosen?

Nate: We looked at a map and, I went…

Question: Was it you who did it?

Nate: I was involved. I lost a few arguments. There’s still no station at Mesquite. I understand
that there might be one some day. Basically, we selected the populated places nearest the Test
Site, completely surrounding it, and then, in concentric circles, moved out. I think the indication
was that 150 miles was far enough out, with an exception probably of the down-winders.

Marjory: The Salt Lake City station was our farthest one.

Nate: That was another story; the involvement of Gary Sandquist. He also lent credibility to the
program. Because, first, Bruce Church knew him, second, it was the University of Utah and the
noise was coming from down-wind. That had a lot to do with the inclusion of the four
participants, the University of Utah and Gary Sandquist. I’m not sure if Gary was involved really any more at that point than in training.

Question: How were the ranches chosen?

Nate: That was done by the EPA, prior to the time of the concept of community monitoring. I have been told this and I probably believe it, that monitoring had gone on for a very long time before the Community Radiation Monitoring Program was conceived. And I know that’s true in some cases because we jerked monitoring equipment out of the backyards of people. The EPA had contacted people in many of these locations, and I’m not sure all of them, many of them, had secured permission to put their equipment in these backyards. And the concept behind this program was to get up front with it, put it out where people can see it, and this again from Three Mile Island, to let people know that someone cares

Marjory: And choose locations on that criteria, visibility. Have signs.

Nate: Crediting all four entities involved. EPA, DOE, University of Utah, and DRI.

Marjory: And the station manager’s name and phone number, that kind of thing.

Question: Whose idea was it to have the station managers be teachers?
Nate: In large part the teams from the communities themselves. Contact was made largely with the county commissioners, if you will, other than, let’s say, Clark County, Las Vegas. In such places as Ely, I met with the county commissioners three or four times, officially going to their meetings, trying to explain what we were doing. That was fun. But, we did get permission from them, and solicited recommendations, which worked out well. Who knows anything about science in these communities? Probably the teachers, where they had schools and teachers. But, the recommendations came from the communities, the community leaders, if you will, and we were quite careful in contacting those people, not walking in blind-sided, but trying to tell them our objectives and getting them on our side.

Question: The early program got a lot of its personality from you since you had day-to-day contact with the station managers. They say that’s part of what makes the program unique, and that seems to have come from you.

Marjory: Nate went out quite often for just getting in touch with the station managers and seeing how everything was going, looking at the stations and talking to the managers, and it was always a comfortable, casual, kind of feel. They were all notified, I think, that there might be a visit, but that was just the way it was. Real down to earth.

Nate: Well, it was family, particularly the original group, with a couple of exceptions.
Marjory: And we used to call the station managers before the announced tests. And then we’d get to talk with them a little bit and see how things were going and tell them about the upcoming tests.

Question: The training sessions started immediately?

Nate: The first two weeks, for a two-week period after the station managers were all hired, Dr. Sandquist put on a training session in Salt Lake City at his laboratory there. Gary was a great trainer, he knew his business, to start with, and a good instructor. He got across the concept of radiation and what it’s all about. Dr. Sandquist is a Mormon and he arranged, through one of the local societies, to have dinner at Brigham Young’s house, which is operated by the ladies of the church. They have social functions there, normally not for outsiders, and he prevailed on them to take this group of people in, which consisted of probably 30, 40 people, and serve dinner, I think, the night before the end of the training session.

Anyway, the dinner, after a great deal of work arranging on the part of Dr. Sandquist, who put the dinner on, was right near the end of the training session. There were a couple of station managers and at least one of the EPA staff who decided it was a real thirsty day. When they arrived at the dinner, one of the guys was a smoker, and as he walked through the door he said, “I’ll be God-damned if anybody’s going to tell me I can’t smoke in here.” I think he shortly thereafter retired from the federal service, whether of his own volition I’m not sure. But, he made that comment and it totally embarrassed everybody. You know, this is a hallowed Mormon place, and that wasn’t cool.
Question: Did they show up half-inebriated?

Nate: More than half.

Marjory: We would have glitches like that every once in a while. Especially when these meetings were out in the hinterland. The only cool place to go is the local establishment.

Marjory: We had some really interesting places to hold these meetings.

Nate: The little town over in Arizona, Dolan Springs. Anyway, this particular little Arizona town, the mayor was a Catholic priest who, among other things, had a wife and a couple of children. But he was our official contact at that location. It went really quite well.

Marjory: Yes, I do remember that.

Nate: The little things that I remember, a Catholic priest as mayor, husband, and father. I suspect he didn’t report daily to the Vatican.

Question: Was there discussion before the stations went in as to how they should be configured with equipment?
Nate: Well, as the name of the program suggests, it was for radiation and nothing more. They didn’t care about temperature or precipitation, anything like that, which I felt then and continued to feel, was a mistake. As I said, now I think it’s being done in real time.

Question: You think it’s a mistake they didn’t include the weather data from the beginning?

Nate: Yes. I went so far as, I think, one time to garner DRI funds to buy a weather station with the intent of putting it up someplace. I think it’s still in a storeroom in Las Vegas. But, in talking with the atmospheric sciences people or others, such as hydrologists we’d ask, “Hey, what kind of data do we have for the state of Nevada?” Their answer was, “Well, we have a weather station and continuous records in Reno, we have records from Las Vegas. Nothing more.” You want to get a little more out of it. Perhaps it doesn’t particularly benefit DOE at this moment, but in reading what’s going on recently, I think it might benefit a number of things. EPA was pretty much in charge of the instrumentation, its installation and maintenance, and sample collection and analysis. DRI had nothing to do with that except that one of the caveats put on this was, “How do we know that EPA, those dirty government son-of-a-guns, are not lying to us?” How do the people out there know that it was not collusion between DOE and EPA, which had been suspected for a long time anyway, in spite of the fact that EPA had been out there from the first. I wasn’t around, obviously, but, from the first tests at the Nevada Test Site, they had people out there.

Every time there was an event, there was a crew of EPA, a hell of a crew in the field. It wasn’t difficult to determine when there was going to be a test. The day before, EPA showed up every place.
Marjory: Yes, in the little white trucks.

Nate: But, they were in charge in this program of all of that part. However, we insisted on having our own, if you will, monitoring equipment, which we carried around. We had limited resources. DOE didn’t think it was necessary, but we put out our air monitoring thing right beside the stations in existence, at random, and had the analysis done at a different laboratory than EPA as a verification of their finding nothing, which was basically what we found any time, every time, except for Chernobyl.

That was educational for many people, including me. You could see the cloud from Chernobyl come in, and with the times on the charts you could track it across our area, which proved to me that something was doing what it was supposed to. But, EPA was, at that point, totally in charge of that end of the business.

Question: Was this program the first outreach program for DOE?

Nate: I think this was the first concerted effort to alleviate the fears of the down-winders, doing something for them instead of dropping radiation on them. The fact is that it went public in 1981, I guess, officially. Other things had been happening before that, unknown to anyone except DOE and EPA. They were out there monitoring. They were analyzing results. The milk testing program was certainly not new to community monitoring. I don’t know that community monitoring ever had anything to do with milk testing, but their water testing, their milk testing,
all the other vegetation and garden vegetables that they farmed, many things were being done
that were not known publicly.

EPA knew the problem, as did DOE, and perhaps just didn’t know what to do about it,
and this program concept was an answer to some long-standing questions. The lady in St.
George or Cedar City, the “anti,” the one that jumped up every meeting that we had. She was
president of the down-winders, something like this, and knew Bruce Church personally, had for
years, I guess, but got up in one of our public meetings and called him a baby killer. Didn’t
please Mr. Church.

Question: Do you think that having the entire family come to the training made the program
different, because that’s kind of unusual. It’s a business arrangement, these people are under
contract to do specific work, and yet at the yearly meeting the whole family, all their kids,
everyone comes, and so everyone got to, over the life of the program, watch everyone else’s kids
grow up. Do you think that made a big difference?

Nate: A very, very significant difference.

Marjory: Yes.

Nate: I met John and Gennie Lisle’s daughter when John was hired. She was probably nine
years old. Now she’s married and has kids. But, having the families there, it was a vacation for
them. These are poor schoolteachers, generally. Some were not. Living in Goldfield, for
instance, this was a boon for Myron and Bernice Johnson, as they got to go to Brian Head, Utah, or Salt Lake City.

Marjory: This was a week-long thing, so it may’ve been easier to have the families come with them.

Nate: And they got to know one another, not that they didn’t before, some of these people are related. Brian Brown is related to John Lisle, they’re cousins or something. And teachers had for other reasons gotten together and kind of knew one another, at least on their sides of the Test Site.

Question: A lot of the ranchers I spoke with talked about their early negative interactions with the government.

Marjory: Yes, I think part of the success of this program, too, had a lot to do with Nate, and I say that just because he had a way of talking with people on a down-to-earth kind of level. But, we would try and do whatever we had to do for them. If they needed something, it was, like, “Right,” you know, “Yes, we’ll get that for you, and we’ll do this, do that,” and so I think that relationship was good, too.

Nate: One of the things we did as a part of the program was outreach, a speaker’s service. You have perhaps heard something about that? We were fairly regular at the Tonopah Chamber of
Commerce meetings.  We’d go out with our little movie and other things and talk about the program at Chamber meetings, normally in the middle of the day.

Marjory:  A speaker’s bureau.

Nate:  Daryl Thomé and I had to deal with the Ely Chamber of Commerce, I believe it was, one of the service organizations in Ely, and there are a couple ways to get to Ely. One of them is up a dirt road through the mountains from the west side, the White River Valley. The normal way to get to Ely is to go up an interstate, a highway, but there’s another way you can take off of that highway before you get to the intersection west of Ely.

It’s before Lund but in that desert stretch in the valley out there, there’s a road takes off up through the mountains.  I had seen it on a map, I’d never been on it. Daryl and I were going up there. Daryl, I think, had taken a little different way.  I had no problem with doing that, if you can’t get through on this road, you go back and try another one kind of thing, and we had had a good time. It was 50 miles of dirt road up through the hills, ran into a couple herds of elk in there, and actually arrived in time to do the presentation in Ely. Daryl never got over that shortcut.

Marjory:  There were some interesting roads out there to take, you know, and things that happened on them, and coming back, I think you were there, we had a station wagon coming back from Ely with Layton O’Neill, Scott and you and I.  I think I was driving.  And Layton was talking, and driving down this dirt road heading to Tonopah so it must’ve been Monitor Valley. All of a sudden, behind us, came this scream, the loudest, I thought the car was coming apart.
I’m looking around, looking at people, and then right in front of us was a jet. One of the jet jockeys had buzzed the car. He came, oh, …

Nate: Fifty feet.

Marjory: He buzzed the car. And I think maybe it was that same trip or another trip down near Tonopah, we did see a Stealth fighter plane.

Nate: One of the good things I remember about some impact we may have had on communities, was Milford. Perhaps our first meeting, a pregnant lady was there. We did our meeting, Dale Jensen was the station manager. Anyway, at the meeting, this young couple showed up, the lady obviously pregnant, and they sat down quietly and listened to the presentation. After the meeting this couple started out the door, I guess visibly upset, perhaps the woman was crying.

Marjory: Something was up, yes.

Nate: And, I believe I said something to them, like “Would you have a cookie?” or “Is there something wrong? Is there something we can do? Are there questions that you didn’t ask?” Something like this. The story was that they had only recently, I guess, moved to Milford from someplace, I know not where. They knew nothing of radiation, never even heard of it until they got to Milford. Suddenly they find they’re in a downwind area, having a child. Is that a good idea? They didn’t know. They mentioned something of their problem, and I, Bob Taft and Bruce Church were brought into this conversation. It probably was Bruce, knowing Bruce, a
sensitive fellow in spite of his size, or perhaps because of it. He talked to them, I think he and Taft together, for 30 or 45 minutes.

Marjory: And Bruce has a big family.

Nate: Bruce is an okay guy. But, I do believe that at least two people in Milford came away better for having been at that meeting. Bruce remembered that well. I was staying a couple of years ago at Brian Head and he brought that up also.

Marjory: We had to have a good rapport with these people because look at the amount of driving. That was your job, your route.

Nate: Well, the ranch people, as I think I’ve mentioned, I didn’t even know. That was all EPA, it was not a part of our program, so EPA did everything with the ranch people that we did with the rest of the people. EPA should get a great deal of credit for that aspect of the outback stations, if you will. Herbie was the boss of these field guys and they all liked Herbie, to say the least. They saved his bacon a few times.

Nate: A good group, and for me, for us, was a pleasure to work with.

Question: Any other stories come to mind that you could tell me?
Marjory: Well, we were loading the van or whatever we had there, hatchback, with the equipment and all, and I used to bring it out and get it all in a cart, had a checklist, and put it on the cart, take it out, and load it into the van, and the last thing to go in were the cookies. You know, sacks of cookies and what have you, and they were right in the back.

Nate: Forty, fifty bucks worth of cookies.

Marjory: But then, I guess, someone decided they needed to put something in there after that. I was already in the driver’s seat, ready to go. Nate got in on the other side, and I’m leaving out some things but that’s okay. We were ready to go to Ely, and turn around, go up to Eastern, because we had to cross Eastern and it’s two lanes each way and there’s no turn-off. I don’t think there was a middle turn lane. So you had to really put the gas on and go. So I had an opportunity and I gunned it, took off to the left, and the hatchback opened up and all the cookies and some other things spilled out all over the road in a big swath, and I said, “Oh, isn’t that great,” or something like that. Pulled over to the side of the road, got out. At this point, no one could hurt me now. I was out there in the middle of the traffic, picking up. I didn’t care, I was just getting these cookies, and threw them back in the car. Someone forgot to latch the hatchback. That’s the way I remember it. How do you remember it, Nate?

Nate: Somewhat like that.

Marjory: Anyway, the story goes on. We finally did make it to Ely.
Nate: There’s no point to the story, really, except that it was one of the adventures.

Marjory: Off to a bad start.

Nate: In Eureka, we had a town hall meeting on the second floor of the courthouse. Marjory again earned her workmen’s comp carrying things upstairs.

Marjory: I remember having a meeting in a skating rink. That was in Utah somewhere. But that was upstairs, or something strange. We set up the chairs on hard-wood floors; the place had high ceilings. And Silver Peak? Remember when we went to Silver Peak? There was a little pub there, hardly anything else, a little town with all this mining paraphernalia all over the place, and the people who came out to that town hall meeting were dressed to the hilt. They had their best Western boots and belt buckles and hats.

Nate: The only event for three years in town.

Marjory: Really an interesting place.

Question: Do you remember any of the questions people would ask at any of these meetings?

Nate: There’s a record of them. We did, carefully and as best we could, record every question that was asked at every meeting. One of the questions may very well have been, “Where the hell were you when you were needed?” things of that nature, particularly in the down-winders’ areas.
Question: And what’s the response to that?

Nate: “We were out there but you didn’t know it.” Of course, this response came from the EPA and DOE. Chuck Costa went to meetings. David Wheeler was the mainstay. When no one else wanted to go, David went. We had the station manager, the DOE manager, Paul Fenske (DRI) and Bruce Church to answer questions on any subject that the audience would like to ask. There weren’t really a lot of questions.

Question: Was public pressure a factor in the origin of the community monitoring?

Nate: Public pressure had been there a long time, as I have said. DOE was catching hell, particularly from the down-winder organizations and the lady who accused Bruce of killing babies. Hurt his feelings, really. It was there a long time before the formal community radiation monitoring program occurred, and there was an attempt on the part of DOE, supported by EPA, to respond to some of that pressure, particularly from Utah. I don’t know in Nevada that there was much pressure. I didn’t hear about it if there was. It was St. George, Cedar City, southwest Utah, and the fact that Bruce grew up there helped. Bruce probably has told you, as a kid, he watched the atmospheric testing from wherever he grew up, the St. George area. He determined that it was of concern and he was going to do something about it, which led him to the University of Utah and his master’s degree.

*From Nate’s speech at the 20th Anniversary Workshop in 2001:*

“For me, it was a great ride. Had fun, met good people, and felt I might have contributed a little bit here and there.”
Juana Blackburn (DRI) became Nate Cooper’s assistant after Marjory Jones moved to Reno

Question: How did you first become familiar with the program? What year was it and what were you doing at the time?

Juana: I came on board with the Desert Research Institute in 1981 at the Energy Systems Center and was housed in the Boulder City office. I first became acquainted with Nate Cooper and Marjorie Jones, who were over the program, at that time. When DRI closed the ESC center, I moved into the water center facility in Park 2000 as a receptionist. Marjorie Jones, at that time, relocated to northern Nevada, to the DRI facility there. Then, Bob Lucas came on board as program assistant to Nate. I was Nate’s management assistant. The time period would’ve been around 1985 that I first actively became involved with the program and it lasted until I retired in 1996. Then I was called back in ’97 to oversee the training program for Brian Head that year.

My involvement started out with the town hall meetings that were held on a monthly basis in different locations. The DOE, EPA, and DRI people were like family. They worked very close together.

I also remember making the calls about tests. I’d get a call first thing in the morning indicating from DOE that they had just had a test; the name of the test and what the magnitude of the test was. Then I would get my list of station managers in each area and place the call. Within this program, we became a close-knit family because we talked to each other frequently on the phone and we had training sessions twice a year.
We’d hold one in the south in December or January. We tried to plan them during school breaks as most of the station managers were schoolteachers. The main emphasis of the training was the annual training sessions. Initially, Gary Sandquist provided the oversight for the training. He did all of the arrangements and we were privileged to have many come from northern Utah, University of Utah, people with whom Doctor Sandquist had contacts. They provided up-to-date training, interest items, things that pertained to that period of time.

There was a lot of activity from the down-winders. We had the negative and we had the positive. We had a situation at one training session where we made press because they felt we were doing something secretive in the mountains at Brian Head, Utah with DOE, EPA, and DRI. They certainly didn’t understand the depth of the program. It provided an opportunity for the teachers to receive credit. The courses were designed so that they were accredited. They took their notes and had a question and answer period at the end. It was an opportunity for the same group of people to assemble each year.

I had the privilege of being the driver, making the logistical arrangements, providing contact and the agendas. At first we put our own copy machine in and we would go up to Brian Head. We had everything. We had laptops. When the laptop computers came out, we thought we were up to snuff. I would take them into the training meetings. From the training session I would provide the information that would go into the annual report. There was quite an emphasis on timing, on reporting, and accuracy, that was required for DOE. Their format was much different than what it became later in around 1994. DOE determined they wanted a totally different formatting so it changed. We didn’t do the annual report as we had done every year prior to that time.
Nick Aquilina, the DOE manager, presented. He would explain to us about the joint verification program that was going on with Russia and with them coming over here and then them going over there. He talked about some of the personal things as well. Things that were discussed in our meetings, we didn’t go out and tell other people because we knew that he shared some things that he wouldn’t want to be misquoted.

Even the material that I would put down to go into the report, they would review it. Nate had such a handle on the program. It was like it was his. He was the one that initiated the program and he took it very personal, the whole program. He didn’t want anything to leave our office that would in any way not be acceptable for DOE. I felt like we had a very good working relationship, as I realized what was acceptable and what we shouldn’t put down.

The program itself touched many, many people. Oftentimes they’d go out to the town hall meetings and the numbers would be small but then we would hear the trickling down and that they would mention it to other people.

The town hall meetings were held on a monthly basis. That was quite an orchestration to be able to provide the drinks, the cookies and the handout material. Nate would load up with that. After Bob Lucas left, he had some participation from one of the DRI employees out of northern Nevada, but that was only for a short time. Then the town hall meeting concept was cut from the program. The financial capability to provide them was not available, so the program was slimmed down.

We would still go and speak at communities but not on that type of a basis. Most of them would be day trips whereas before they’d be overnight trips. We talked about going into the Kingman area, expanding the program to Arizona, but there was never the funding to be able to provide that. I felt like it was a very well-planned work setup.
When our focus changed after the testing, it was more concern for the transportation of nuclear waste. The focus changed and it was more atmospheric monitoring rather than the nuclear testing, but our station managers were still viable persons there. They were able to be a contact person if anybody had any questions in a community. And I felt that the stations, the visibility of the stations as they were located in the different communities, like for instance in St. George on the campus at Dixie College (it’s Dixie State College now). We’d get a lot of people to stop there and look at the station and the signs would explain what it was. There was a contact person there that they could call, a station manager, if they wanted to have more information. At that time it was Jack Heppler and Kelly Bringhurst.

They would get calls from people that were thinking of relocating from California but they wondered if there was a chance that they’d be exposed to nuclear fallout? They could show them the reports and the readings. The program was such a vital asset for DOE to be able to have. We were DRI, we were not DOE and we were not EPA. And I felt like that was the greatest bonus because the station managers were all DRI employees. So, that gave us an opportunity for people, that if they had questions about government agencies, they were able to communicate with somebody.

I also did monthly mailings. I would do a monthly mail out and I would put together information and highlight different things. One area might have a spokesperson that might be more accessible for one area to attend. I would go through it and indicate, “This might be of interest to you and you might let your other people in your area know.” So they would post this notice that would be sent out for their station. Through our DRI office and through all these locations of our station managers, we were able to keep them up to date on the latest directives. And a lot of it was just good information. Many of the teachers were able to use some of the
information in their classroom studies. A lot of them were able to provide it to others in their community that had an interest or made inquiries.

There was so much involved in the workings of the program. One areas school would be going to another area, competing in sports or something, and the teachers would visit, talk and share things with each other. That really made it personal. Then we’d get those types of interactions when we would assemble for our training sessions. Nobody would want to miss the training sessions because you didn’t know who was going to come up with something. It worked so well because of the personalities of the station managers. I always felt comfortable. I never had a situation within our group that wasn’t a positive experience. Some of them might’ve not been happy about something and we found ways to iron it out we’d get information for them or help them.

One of the other benefits of the program was that one time we provided teachers the opportunity to attend our training sessions. They had to submit a paper in writing. We would select a certain number that we had funding for. This was an educational component that we had for three or four years. And it was great to also have some interaction from other teachers.

The closing day of our training session on Friday would always be report time and we’d start from each place. They would get up and some said, “Well,” you know, “it’s just great to be here,” but then others would go into greater depth or details of what they gleaned from the session. I do recall some of the educators that participated responded back also to DOE. I’d get letters that said, “Please forward,” DOE or the EPA, thanking them for that training opportunity. Many wrote that they had a greater understanding of what was entailed in the testing that had taken place, the history of it, where we were at the present, where we were going.
We would provide them information, contacts that they could even take to their classroom. I think that the biggest bonus of this program were the students throughout the state of Nevada, Utah, and California who benefited.

Don Curry is a good example. He is just a phenomenal educator and it would’ve been great to have a dozen cloned after him. He caught the vision of what the program provided and the education that could be there. His students ended up traveling different places all over the world. Some of these educators that were selected to come to the training sessions and get involved in the program; where else would they ever have that opportunity?

So the program itself had an educational aspect for all these years. And I know that it has produced students that have gone on and sought higher education. It’s produced young people that maybe at a certain time in their lives were exploring some areas that they wouldn’t have gotten in just a classroom setting.

Question: Everyone talks about the old training sessions and the talent shows. Do you remember anything about those?

Juana: Oh, yes, I was the one that initiated that. –

Question: What were some of the talents, do you remember?

Juana: Bruce Church played the piano and he has a beautiful voice. He would play the piano and sing. And Jack Nelson from Logandale, his family was gifted, talented. I remember our first training session up at Cedar Mountain. It was a like campfire-type setting, and we had a
group that would come and do our cookouts for us from Summit, Utah. They did our cookouts about eight years in a row.

The first year, the fellow running the cookout said, “My daughters do clogging.” So I said, “You mean you not only provide the food, you’ll cook out and you’ll provide our entertainment for us.” So they danced and sang. They had a guitar and that’s when Jack said, “We’ve got a fiddle out there.” His children had fiddles, violins and they also sang. From that year forward, I would put his wife in charge of the entertainment.

I would send out the flyers and say share your talent. We had magic tricks, poems, and stories. Gary Sandquist liked to play his guitar and sing. We said we would pay him a whole bunch of money if he would cut it down to one song. Brent Perkins up in Caliente, his wife had taught dancing and so she would dance. Most of our station managers were members of the Church of Jesus Christ of Latter Day Saints, and Monday night was their family home evening night. So our Monday night became that too.

Sunday night was our reception, and for many of the first years, I would go and prepare everything in my room and bring it down. I would haul everything either from Vegas or Cedar City up there, beverages, hors d’oeuvres, you name it. Then, as I was getting ready to retire they got smart and started having the hotels do the catering. So Sunday night was just a social night of getting there and renewing friendships. We would have a nice reception that evening. Then Monday night we’d break it up. Tuesday night was usually our cookout. Wednesday we would usually have some kind of a field exercise. We split the week up. On Thursday night we’d do hot dogs or something like that. Then we’d all leave on Friday.

Monday night, I just said, “Well, I know we’ve got talent,” especially since that one cookout, so I said, “Well, let’s change this into our fun night and bring your families.” “Let’s do
something fun.” And it just had a snowball effect. They’d do rounds and people would get up that would never in any other situation. But you really don’t know the gifts and talents that people have. When I sent out the notices, I’d say, “Okay, sign up!” And they would. It was fun. It was a family. We watched these kids grow up; from the time they were little tykes to next thing you’d know they’d be getting ready to graduate from high school and then college.

Question: How did it evolve that the families came? That’s kind of unusual for a business training session, for families to go as well.

Juana: The December or January training session, as a rule that was just the couples and it was a husband-and-wife-type program. We had some women that were the station managers, and then some of the husbands would come. It was a family thing. We wouldn’t be able to provide the same setting if we took just the one person up in the mountains for a week. That wasn’t the intention of the program. They were small communities, most of them, and it was a family thing.

I still think for the personalities of the station managers, whatever little bit they got paid, has got to be the best money that DOE ever spent. Because they actually lived there; they walked the walk, they talked the talk. They were there and if there was any fear monger-type things, they wouldn’t be residing there. They wouldn’t be raising their families there. They would’ve said, “Hey, look at this reading! Whoo-hoo!” “I’m outta here! I’m going to higher ground.”

I think of what we were privy to; to have been able to have the specialized people that we had come from all over the United States to talk at the training. Nowhere else would you ever
get access to that much material and information. Even within a group like that, we would still
get some discussion about the negative aspects. I think the contrast is always good because it
generates thought and it generates a little more research. What was so great was the support of
EPA and DOE, of having their top, key people there that could answer those questions. That was
a privilege that this group of people had through their association with this program.

It would’ve been nice if we’d had a program such as this in the ’50s and maybe we
wouldn’t have had down-winders. But you can’t go back. I’m just grateful that they’ve had it
for as many years as they have had it. I think all we can do is reflect on the past but focus on the
future. The people are the program. The equipment is sitting there. The equipment is doing the
reading. But it’s the people in the communities that have been the strength of the program they
aren’t DOE. They aren’t the government in any way, shape, or form. I think that they are our
greatest ambassadors. They’re genuine people and if we did have an emergency, if we ever did
have to do anything, they would be on the front line.

I think that Nate Cooper was a visionary man. And I think that Nick Aquilina, Bruce
Church, Chuck Costa, Daryl Thomé, and that group of people, no matter what era of time they
were in, were thinking of the good of the people involved in the program.

Nate would walk into the office, he’d have his sports jacket on, his shined shoes, and he
was very neatly dressed. Get ready to go out to visit the community, on goes the jeans, on goes
the cowboy boots, on goes this old hat, and out the door he went. He wanted to not be above the
people, he wanted to mingle with the people, and he even dressed in that attire. He never was
pretentious. Now me, I like to dress as nice as I can no matter where I go, so I probably would
go out with a nice pantsuit on where Nate would wear Levi’s and a Western shirt.
One time he went over to DOE and he was to meet over there. He came in the office and I looked at him and I’m thinking, “Nate, you’re not going out on the road, you’re going to DOE for a meeting.” Then he said, “You know, I thought to myself as I was getting dressed this morning,” he said, “I had my dress clothes out and,” he said, “I’m just talking about the program. I’m trying to save this program. I want them to know something about the program.” So he went over there looking like he looked when he goes out. He said, “Now, look at all of you. All of you in your white shirts, your ties and everything else, you walk into those communities and they’re going to all of a sudden, ‘Ahhh!’ The sign’s going to go up, ‘Who’s this guy? What are they tryin’ to peddle? What are they doin’?’” Whereas Nate went in, sat there, leaned back and I said, “That’s why he’s accepted. That’s why he’s recognized.”

He could walk into any town meeting. There would be somebody there, a political person. Nate’d go in there and put his foot up on the desk and sit there and visit and lean back, and he was accepted because he wasn’t pretentious. I think that he thought about the people and so he wanted to look like he fit in and that’s the way he was in his mannerisms, that’s the way he was in his approach. He didn’t go in there and say, “Now, I have this.” He’d go in there and he’d say, “Hey, Joe, how’s it going?” And that was what made it work. That’s what made it work. He put himself into their place, more or less.

To have that many people for that many years, all different individuals, different make-ups, no matter if they are in the smaller communities, that still have such a good rapport and relationship with one another, is really commendable.
Chapter Three
CEMP Goes Hollywood

Marg Herndon: The first time I was really involved in the program was in August of 1981 when they hired the original Station Managers and we had them all go to Salt Lake City. I made arrangements for them to stay at the University of Utah campus for two weeks. I worked for Nate Cooper until the spring of ’82, then I moved away from the program for three years.

Marg was later involved with the program as Division of Hydrologic Sciences Business Manager.

Printed in the March 1998 Pahrump Valley Gazette:
Hollywood came to Goldfield, Nevada, and took immediate interest in the Community Technical Liaison Program (CTLP). The CTLP conducts off-site radiological environmental monitoring in 17 communities in proximity of the Nevada Test Site (NTS) It is a cooperative project of the U.S. Department of Energy (DOE), the U.S. Environmental Protection Agency (EPA), and Desert Research Institute (DRI), a University and Community College System of Nevada entity.

A film crew and several actors descended upon tiny Goldfield last month to begin filming a new Hollywood
thriller. John Heard, a star of the production whose film credits include, *Home Alone 1 & 2* and, *American Presidents*, noticed the radiological monitoring station near the town library and became curious and somewhat concerned as to its purpose. The film director, fearing a walkout by some of the nervous cast members, sought more information about the radiological monitoring. One question led to another and soon word of his worried inquiries was relayed by Diane Shimp, the Goldfield Community Technical Representative (CTR), to DRI and DOE.

The following day, George McNeill, Mark Sells and Marg Herndon, representing DOE, EPA and DRI, respectively, traveled to Goldfield to meet with the cast and crew to explain the purpose of the CTLP and assuage any fears they held of working in the local area. It was explained how airborne particulate was historically examined for radioactivity resulting from atmospheric nuclear tests and, in recent years, how monitoring for venting from underground tests was included. The stations remain operational and reduced sampling is now conducted under a Presidential mandate related to test readiness. Additionally, the environmental sampling can provide a reliable source of information for the citizens in the local communities who may be concerned about ongoing activities at the NTS. Although EPA data records consistently show that there is no cause for concern regarding radiation exposure and the visitors seemed pleased with the details they received, they requested two thermoluminescent dosimeters, used for measuring radiation exposure rates.

In each of the 17 designated communities, DRI works with civic leaders to hire a local resident to serve as CTR to manage the citizen-operated stations that are furnished by DOE and maintained by EPA. Each station is equipped with a low volume air sampler to collect airborne particulate; a charcoal cartridge that measures iodine gas; and a pressurized ion chamber detector used to record gamma radiation. Some of the stations are also equipped with meteorological
instrumentation to provide wind speed and direction, humidity, barometric pressure and external
temperature. Primarily, solar-energized batteries power the stations. Public access and
verification of the data collected is a key objective of the CTLP and discussions are currently
underway to have this information available via the Internet.

**Marg’s version of the story:**

*A Hollywood film “Desert Blue” was being filmed in Goldfield and John Heard was the leading actor. One morning they were filming across the street from our station and in between scenes, John wandered over to the library to look at some of the relics in the yard. He’s from New York and had never been to the wilds of Nevada before. Then he noticed the monitoring station. He thought, what in the hell are they monitoring out here in the middle of nowhere? There must be something out here to warrant having all this equipment. He thought this could be dangerous to our health. Our Station Manager was the librarian and was fairly new to the program. John started quizzing her about the station and the more she tried to explain that we’re no longer testing and reason why the station is there, the more concerned he became. He started calling some of his friends who were quite high up in the Green Peace organization. He decided to halt the filming because he didn’t think it was safe to be in Goldfield. Meanwhile, the CEM called DRI and said that this film crew was creating some revenue for Goldfield and asked if anything*
could be done to reassure them and keep them on location. It was decided that three agency representatives would drive out the next morning. I was one of the chosen three along with Mark Sells from EPA and George McNeill from DOE.

It was a clear but cold and windy morning when we headed out in a DOE vehicle. They were filming again since John decided to continue when he heard that we were on our way out to talk to him. Our CEM introduced us to him and the first thing he asked me was what did I have on my shoes. I looked down at my shoes and asked “what do you mean?” He said “can you tell me the truth that this dirt you’re standing in is okay? Is there any radiation in this dirt?” I thought that this guy was really putting me on but he was very serious. He had no idea about what was going on at the Test Site. He had grown up in New York and had absolutely no knowledge of nuclear testing. I guess in New York they don’t worry too much about what is going on in Nevada.

We had all kinds of literature and we talked to him and showed him our data. We were able to assure him that the station was registering nothing but if something did happen at the Test Site, the equipment would pick it up. He was quite impressed that three government employees would drive that far to talk to him.

They invited us to have lunch with the film crew. They had big grills set up and were cooking hamburgers, hot dogs, and
veggie burgers. There was lots of food. We went into a large tent and I sat next to John. I remember that he got me a diet coke to go with my lunch. I told him that I had lived in Ely during the ‘50s and the open-air testing and he commented that I looked okay to him.

We stayed and watched some of the filming. One of the scenes took place in one of the old Goldfield homes and John was to exit the house, throw a bag into a SUV, and drive away. Well the first time he came out, put the bag in the SUV, got in and then he said “where in the hell are the keys?” The director yelled “cut”. No one knew where the keys were. Everyone but the director was laughing, it was hilarious. Finally, someone had to admit the keys were in a pocket so they redid the scene with John driving away at the end. This was a film about a chemical spill that was covered up and everyone was kept in this little town with several teenage kids trying to get out. I later rented the movie at Blockbuster and it was fun to see the scene that we watched being filmed.

Question: Too bad they didn’t put you all in the movie.

Marg: Right! I remember thinking how young all the cameramen and producers were. No one looked like you’d think they would.
Anyway, that's just one example of our monitoring station and how people do notice them. Here’s a film company in this century worried about what happened back in the ‘50s and ‘60s. So, you think all this is over and people aren’t concerned, but that’s not really true. I think this history, the legacy of the Test Site and Cold War, will probably always be with us.
Field Monitors are a rare breed. Several days a week or weeks a month, they travel roads in Nevada and Utah few tourists ever see. Maintaining stations in cities, small towns, and individual ranches brings them into contact with a wide cross section of society. The hours are long; the road is lonely, and sometimes dangerous. Trouble on the road may mean hours of waiting before help appears. For problems other than those requiring a wrecker, self-sufficiency is a job pre-requisite for the field monitors. Flat tires, animals in the road, bad weather, bad roads, and bad drivers are perils they face as part of the job.

Like the Post Office, Field Monitors work in all kinds of weather, from the blistering heat of the southern Nevada summer to the freezing winters of northern Utah. As one Field Monitor, Lynn Karr, put it, “You go to a place where God lost his tennis shoes and turn left,” some of the locations are so remote.

With years of interaction, Field Monitors have built critical relationships within communities. In more urban settings, like Las Vegas, this contact may not be as vital. In smaller, rural communities, where many of the stations are located, the monitor is a familiar and friendly face. Personal relationships with ranchers in rural Nevada are especially important. Isolation, economic challenges, and consistent negative interaction with government agencies have encouraged a distrust of government representatives. The Field Monitors are countering this distrust.

Ken Giles runs the ranch route weekly. He knows all the ranch histories, family trees, and skeletons in the closets, not to mention every dog at each ranch. Not only is it obvious that the ranchers like and respect Ken, more important, he has their trust. Visiting the ranches is as much a social event as a technical necessity to maintain the stations. Usually, everyone is out working,
so no one will be around. However, occasionally there is a sit down for a cup of coffee or even to share a meal.

The Monitors know every nook and cranny of their route, from petroglyphs to pupfish hideouts. In part, this is because most of them are explorers by nature. In addition, a large part of their job is talking to people, making their presence and the existence of the station known within the areas covered by their routes. They gain knowledge as well as share it in this process.

**Monitoring - EPA Years**

**Don James - Field Monitor for EPA 1961 to 1999**

Question: When did you first become aware of the environmental monitoring program?

Don: It was about 1959. I was working at Rocky Flats in Colorado and a friend of mine visited here in Las Vegas. He came back and mentioned to me that they had an opening with the Public Health Service, United States Public Health Service, as a technician, and I was interested, so I filled out the government paperwork and sent it in. Then, about a year later, about 1960, in November, I came out here and talked to the people in the Public Health Service. They were down on Charleston at that time, 103 Charleston. I was interviewed by Jack McBride, he was assistant director at the time, and he hired me. That was around November of 1960. So I said, “Well, I have to give the people at Rocky Flats a notice,” so I went back and told them I was accepting a job out here.

I left there in January 1961 and came out here. My first day was January the 9th, 1961. I signed the papers and immediately went out to the Nevada Test Site, and stayed out there for at least three or four years. I just stayed out there. It wasn’t much of a technician job because they
were having reactors at the time. Kiwi, I believe, was one of them, so we were quite busy and they put me right out in the field monitoring the reactors. There was a moratorium on at the time for underground nuclear shots. We did a lot of time, a lot of work on the reactors, putting out fallout trays and film badges and all of that. And that was mostly duty, plus doing counting: counting soil and water and vegetation.

That went on and then, Russia started up nuclear testing in the atmosphere, so we went back into the business of testing also, and not only underground testing but we did some atmospheric testing. I believe they had four shots. I can’t remember the names of them. Little Fellow I and, Johnny Boy and there were two other ones. There were four of them in a series. It was quite interesting.

I was quite close to a couple of them. I was out in the Gold Flats area and, I think it was, Little Fellow I, but it was absolutely beautiful when it went off. It was early in the morning and you saw the mushroom cloud, quite red, orange, just when the sun was coming up. I was probably ten air miles from Ground Zero, and it came out over the top of me and I did the monitoring, did soil sampling, and took reading. After that, most of them were just underground nuclear testing. I counted them up one time and all the ones I participated in, it was 819 atmospheric and underground, nuclear explosions. I was also involved in all of the Plowshare and the ones in northern Nevada, they had one up there which was Shoal and then Faultless.⁷ These were in the ’60s. That’s between Tonopah and Ely. That was a megaton shot there.

And, then the one in Carlsbad, New Mexico, Gnome. That one vented, and we spent several days there, doing monitoring clear down to the Hobbs area and clear over into southern Colorado and northeastern New Mexico. It was quite extensive monitoring.
Then we had Gasbuggy, which is in Farmington, New Mexico. It’s located on the Forest Service property, but most of our sampling wells are on the Jicarilla Indian Reservation and we worked with the Apache Indians. We go there once a year to do water sampling and that’s been going on for several years. Go once a year, and we work with the Indians there. It’s really nice. Enjoy it very much.

Next were Rulison and Rio Blanco, that’s in Colorado. They were underground nuclear, shots, and we sample there once a year for water. And then of course Mississippi, the Dribble site, and we go there once a year. That’s quite extensive. We have to bring a lot of equipment down there. Takes us a whole week of sampling, and the weather is, even in April, quite miserable. It’s very humid and hot. But it’s interesting. I like it. It’s very enjoyable. That’s what we do so far.

Question: When the community monitoring program started back in the early ’80s with Bruce Church, Chuck Costa, and Nate Cooper, were you involved?

Don: Yes. In December of 1970, the United States Public Health Service became EPA. They took a lot of the people from the Public Health Service and just moved them into the EPA. And that’s where it happened. The program you’re talking about, that’s the one where we set up the monitoring locations at some of the towns like Tonopah, Ely, and Austin. Shoshone, California, Delta, Utah and Cedar City, Overton and, several others. DRI and EPA were really involved in that. Still, more or less, though most of it’s been turned over to DRI.
Question: Did you go out to the field with Nate Cooper on some of these trips, trying to talk to the ranchers and talk to people in the communities about having a station in their community?

Don: We spent several weeks and talked to people, set up the equipment.

Question: Do you remember anything about those trips or anything about your interactions with the communities?

Don: It was fairly easy for me because I knew all the people since the early 1960s. It was just going there and talking to the rancher or the city people, police, firemen or the mayor. We had no trouble, although Cooper thought, “Well, might have a little trouble.” I said, “No, we won’t have any trouble,” and we just went over and shot the breeze with them and they said, “Where do you want to put it, and who do you want to run it?” It went quite well. They had a lot of questions that had to be answered, but they were really excited about getting these programs into the towns and the ranches.

In fact, some of the people, some of the ranchers, we even got involved in changing the air samplers and things like this, because we were short-handed and couldn’t get to them that often. They’d go ahead and change them for us, which was quite nice. And they got very little for that, something like about two dollars a day or something like that to change the filters and mail them back or we’d wait and pick them up when we’d get out there.
Question: A lot of the ranchers talked about early interactions with the government during the shot times and their perception of the government was a very negative one. Did you run into that when you were talking to the people on behalf of the EPA?

Don: No. The Public Health Service and EPA were up front with all the people. Even with the security, “You can’t do this,” “You can’t say that,” but, hey, those people been out there for fifty years, five and six generations and they don’t say anything to anybody. If a stranger comes around, they just don’t communicate with them.

So we knew there was no problem of letting out any secrets or anything. They were very cooperative. We kept them posted, told them exactly when the underground nuclear shot was going to be, and usually had a monitor standing by at the ranch and we were very well accepted. If it was dinnertime and the shot was postponed, you’d go in and have dinner with them and they’d bring out coffee for you. They accepted us really well. They didn’t accept the Forest Service or BLM. They said those people are not up front with them, and they just really don’t get along very well, but they did with us. In fact, there at Nyala, at the Sharp’s when people would come in there, some of their relatives or other people, and I’d be there, they’d come over and introduce me to them. They’d say, “Here’s the EPA man with the white hat.” I thought that was quite funny. But that’s the way they took me because I was honest and up front. So was Kenny (Giles). All of us. All the people. We were really up front with them.

Question: I’m betting you didn’t go out there wearing a suit?
Don: No, they don’t accept that. I’ve been to several funerals and weddings up there and you don’t even wear a suit when you go to a funeral. You just have a nice pair of Levi’s and a white shirt and look clean and decent. They just don’t accept people with a suit and a necktie. No matter if it’s a wedding or a funeral. They’re just country people, Western people, and that’s the way they dress. And, it’s pretty neat. I like it.

Question: When I went out with Kenny, you know Kenny is so well liked and respected. A lot of the ranchers sat down and talked to me, and I know that they would not have talked to me if I wasn’t with Kenny.

Don: They probably wouldn’t. Well, they’d talk to you. They’d be very kind to you and nice, but they’d talk a long time and you’d never get anything, wouldn’t hear anything that you wanted to hear. That’s the way Kenny is. They’re really open to him. Kenny’s done a lot. He just went out, when he was in the deer study. He made slides and also an eight-millimeter movie of the deer and how he tagged them, and he went to several town meetings and showed that to the people in the ’80s. And man, they loved it. Went out to the ranches and set up all the equipment in the evening, on his own time, and of course people just loved it. They still ask him, “Oh, bring it back again. We want to see all that again.” He said when he gets time he’s going to do it.

Question: Did you go to some of the town meetings?
Don: Several of them. I remember one in Ely, there was quite a few people when we went to that one. Nate Cooper was there. They brought all the soda pop, and, we had a pretty good turnout there. I think there was about 30 people that showed up. I was looking for more they were enjoying it. And then Tonopah, we had a nice meeting there. Then in Austin, there was a nice turnout. A few people were a little uptight, didn’t believe in what we’re doing and so forth, but after everything was over and we explained everything they said, “Well, sure glad you have this equipment. Now we’re satisfied.”

We were in St. George and there was quite a turnout. There was probably a hundred people. In fact, Bruce Church was there and I was there, and there were a couple other EPA people, and we had some people from Japan. They were news people, and they just showed up because they’d seen the posters we put all through town. They just happened to be in town, so about eight or nine of them showed up with their cameras and everything else, and it got interesting. After the meeting was over, they all just walked over to Bruce Church and asked him all kinds of questions. Bruce, you know how he is, he just did an excellent job explaining everything to them and it went quite well. We’d get a little hostility at first because people come there expecting something different. Then people who did the program, Nate Cooper, Bruce Church, or whomever, just smoothed it out and they understood what we were doing. So hostility wasn’t really that much in these towns.

Question: How about Shoshone?

Don: Once we put the station in there, everything was all right because the schoolteacher who was running it there, Brian Brown, talked with the people and that smoothed over quite rapidly.
Where most of the problem came was when they removed it at Shoshone. The people got all uptight. They said, “Oh, sure, yes, you take it out just because they stopped underground nuclear testing, and it’s still here,” and we explained, “Yes, with the finances, we couldn’t leave it.” They weren’t happy, they’re probably still a little hostile because the unit was taken out.

Question: Do you think the program should’ve continued after the underground testing stopped?

Don: My personal opinion is yes, it should’ve continued. Radiation’s still there, and you’ve got a lot of alpha contamination in some of the areas, Area 7 and around Yucca Mountain. All that is wind blows, the dust blows, and it’s got to go somewhere.

Question: Do you think the program started too late?

Don: The monitoring centers? Well, you can actually get a lot of background readings, which are just as important as anything else, and if they ever resume nuclear testing, it’d be pretty doggone hard if you just pull up stakes and run, and then when they go back in and you have to go back and meet the public again and try to set these up, I think you’d really have a very hard time. The people would just say, “Absolutely no.” Some of them would cooperate and some would not. And the ones that you’d want to cooperate would be exactly where you wanted to put the units and they would not want anything to do with it. And you talk about the cost. There’s a cost for the public relation and that’s money well, well spent. They should put more on there.

Question: Just put one in at Ely.
Don: One in Ely. They should put them back, my personal feeling, every place where they were before. Austin was a good location.

Question: Was Chuck Costa director then?

Don: Chuck was the EPA director. And he was on the DOE panel on nuclear testing and he was at Three Mile Island. I think the model for the program was Three Mile Island. It was all put together by DOE and EPA. They said it worked so well there because we had a lot of noble gas units and air samplers surrounding the reactor and then the towns all around.

We had a mobile unit that we moved around, a grab sample we called it, with noble gases. And wherever the drainage winds were going, when we’d get back from our run picking up the air filters, we’d get back usually around four-thirty, five o’clock, whoever got back first would grab the noble units, and go find a place where the drainage winds had gone that day and set up and run a grab sample, which would take about an hour and forty-five minutes. We’d just pull the little orifices out of the unit and that way it’d just suck all the air and it’d take about an hour and forty-five minutes. Get about 400 pounds of pressure in two tanks. Then we’d send those off to count them for xenon and all of that stuff. It worked quite well.

I remember they had several underground nuclear shots that were going on, so you were there with the people all the time. Every day, sometimes even on weekends. So, you got really close with everybody. Then as time went on, after ’93, we started only going out maybe once a week, and you never had the contact with the people like you did before. It’s different now.
If tomorrow the President says, “Hey, we’re going to resume underground nuclear testing,” you’re going to see a lot more money pour right away into everything, so you’re already one jump ahead because you got a lot of it already running and going. It’ll just be easier to move right on into the testing program.

Question: Do you think public concerns are different now then they were when testing was ongoing?

Don: No. A lot of your older people are still skeptical that the government’s done them in. They still believe that and they’ll believe it till the day we put them in the ground. But these young people coming up, they understand that it has to be. You can go talk to the younger people and they say, “Oh, why, we don’t want it,” but when it comes right down to it they’ll agree and go on. They know it has to be.

Most of the older people, they just do not trust the government to tell them. That’s one of the reasons they trusted EPA and DRI, because we told them the truth. We were right up front with them. And we didn’t beat around the bush or anything. We said, you know, “Hey, you had exposure, and these are up here, that’s why we got the equipment.” We gave them the results, we let them know what was happening, and we told them they were exposed during atmospheric testing in the ’50s. AEC at the time wouldn’t say too much. In fact, they wouldn’t say anything at all.

We saw cows out there and horses that had big white blotches on their coats, where they had beta burns. When the hair comes back it’s white. They said, “Ah, it was ringworm.” That’s what, their veterinarians, their AEC vets said. Those people aren’t dumb. They’re all educated.
They know a beta burn from a ringworm. And, they were lied to. But we didn’t lie to them.

The EPA, Public Health Service, EPA, and DRI came in. We told them the truth. We were right up front with them. And that’s why we were liked. They’re still skeptical about DOE. They’re still a little shaky with them. Even though the money’s coming from there. They’re nice to the people but they’re skeptical.

Question: When I interviewed Roy Clifford, he talked about seeing the clouds come over and he still said, “Even though I’ve lived here through this,” he said, “I still believe that testing is necessary.”

Don: Well, just about all of them believe that.

Question: Is there anything else you’d like to add?

Don: I’d appreciate it. I hope they continue this program and I hope it gets bigger. It’s good money, well spent.
Victoria Nieman - Field Monitor for EPA 1995 to 1997

Question: When did you first become involved with the CEMP?

Vickie: Initially, I worked in the laboratory doing noble gas analysis from samples that came from the community monitoring stations. I worked there for about a year. It was early on when I went to work for EPA, so it would’ve been in the ’95 time frame. I was in the lab for about a year, then I moved over to field monitoring actually servicing the stations, collecting samples, doing calibrations, replacing boards, et cetera, in the stations themselves. I worked in that capacity for about a year and a half.

My normal route included, up into Utah and central Nevada, Caliente, and Ely. I ran that route routinely. As part of that, I also collected dosimeters from the stations and also from personnel who were involved in the program. I interfaced with the community monitoring station managers who were individuals in the communities, generally science teachers. Not always, but often. I really learned the value of the program during that time.

I think that probably was some of the best money spent. That, of course, was funded by Department of Energy money, and it was probably some of the best money that they spent concerning public relations because personnel in the communities, when something came up, had a question on anything dealing with radiation, rather than calling some unknown government entity, they contacted their community monitoring station manager. Then that person had credibility in the community but they also knew where to go to get answers.

Question: Were you involved in any of the training?
Vickie: If I remember correctly, there were generally two training sessions a year conducted. I participated in a couple of those, whereby the program actually brought in some pretty high-level people to provide training to the community monitoring station managers. Sometimes they had, I know at one meeting, I believe it was at Ely, they had people who were against the underground nuclear testing program. So they had speakers on both sides of the aisle.

Because of the selection of the candidates for community monitoring stations, because they did have a scientific background, most of them, and the training that was provided them, we really had some of the most knowledgeable people out there in the community as kind of their extra job. That was very, very beneficial, I think. At one time, we hosted a little study that was done by the Richland, Utah, site, because they were talking about also establishing the community monitoring station up there. Also, we did do some interfacing with Carlsbad because of a project they had going. I don’t know if they ever actually established their community monitoring system or not, but they came and got information from us.

The stations at that time generally consisted of a Reuter Stokes gamma monitoring station. Some of them had molecular sieves where tritium was collected, and of quite a bit of interest were the noble gas samples collected. I’d had experience with running those in the laboratory, so dealing with them in the field was pretty interesting. One thing about the program that was kind of a thorn in my side, when I worked in it, both in the laboratory and in the field, was some cryogenic containers that were designed to collect field samples. We actually evacuated the lab on a few occasions because occasionally the relief valves would stick on the things and they used liquid nitrogen, and if the relief valves stuck, you had the potential to have a canister go mobile on you, through walls and things like that. They were particularly difficult to handle in the field because you were traveling solo for the most part. In almost all cases, you
were, and they were heavy, they were hard to handle, they were bulky. You could manage it but it was pretty difficult. They continued to fail over time, when I was working in the program and even after, because I still worked at the laboratory. Eventually, they reverted to the old, yellow collection devices, which were pretty straightforward. Originally, they adopted the cryogenic containers to get larger samples and they did, of course, because of the compression of gas, but as it turned out, the old, yellow canisters did produce pretty good samples.

In returning to the laboratory after spending about a year and a half in the field, I went to the whole body counter. I did gamma spectroscopy and the whole body counter there at EPA for the duration of my time at EPA. I came over to DOE in ’91, I believe, 1991, January. Actually, we did run some tests and, proved at least to my satisfaction that smaller sample sizes were beneficial in running through the rig. It was quite an interesting rig they had designed over time. In running through the rig and the many processes that they were subjected to, the smaller sample sizes seemed to lose less of the noble gases on the media that they ran through. So, we kind of went back to an older technology there.

It was interesting, very valuable to the underground nuclear testing program, from a PR perspective, of course, because the main function there was to look at the noble gases, which would indicate any kind of a seep that they had from an underground test at the Test Site or a tunnel test. They did try some interesting technology. I know at one time they were tying gamma monitors and Reuter Stokes into a system that could be read at a distance. A lot of those stations were battery operated because there wasn’t any commercial power. They had solar panels and batteries. Those really worked quite well, and they were used as a backup at some of the other stations.
Question: Who did you work for when you were at EPA?

Vickie: I worked for Chuck Costa. I came over to EPA a few years before Chuck retired from EPA and he, of course, now works for Los Alamos National Lab. Actually I still work with him, in some respects.

When I first decided to go to the field, I did it for a promotion and to expand my knowledge of the whole environmental sampling process, and people were a little bit aghast because we did travel in some pretty isolated country. A radiochemist that I worked for in the laboratory before going to the field told me, “Ooh, you know, that sounds a little dangerous and you never know who you’ll run into out there,” and I laughed and told him, “You know what? I think per square mile, I’m much more likely to run into weird characters right here in Las Vegas than I am in the field.” And, that was true, because I never ran into any frightening situations regarding personnel.

There were a few times, of course, because of the weather. I know at one point, I was up in Railroad Valley, we had a ranch out there that we went into, a couple of them, actually. It was snowing and no road signs and it snowed over the roads and you couldn’t really tell which road was which, but I never really worried a lot about that because I was normally in radio contact. We had radio contact, except in very few instances. I used to lose it sometimes going up into Utah, but that was pretty well populated anyway, up in St. George and Cedar City. It was no big deal.

For the most part, at that point in time, we had very good radio communications from the Test Site, good old net 12. So you knew that if you ever got into major, serious problems, that
you weren’t going to be totally out there. They took a head count at the end of each day and you
had to check in and tell them where you were.

I didn’t have any real unusual, frightening experiences out there. I guess, when I first went to
the field, I was somewhat blasé about wildlife. Occasionally, you would run into herds of cattle
out there that would decide they were not going to move off the road. Some bulls would even
threaten to charge your truck, but that wasn’t too bad. They might have dented the truck but they
weren’t going to hurt me much. They had some Brahmas and things like that out there, which
were kind of interesting and fairly aggressive. But, I never much worried about wildlife and, if I
was out in the middle of the valley, or on a mountain, I’d stop and have my lunch, sit right
outside and it never even crossed my mind.

Then one day I went into Uhalde’s, which is kind of a famous place out there. They were
telling me that a big cat had climbed one of their big trees right in their yard and had used the
tree to launch an attack and killed one of their big rams.

There also was a ranch farther north that I used to go into. It was as you go across from
Warm Springs into Tonopah. They were telling me a story. They used to, in earlier years, for
bounties, hunt the big cats. They had a bunch of dogs they used to hunt big cats with and they
used to collect bounty on them. They used to do that as a sideline to their ranch work. The
rancher up there was telling me that at one point when they were at their ranch, they had a three-
year-old stud colt out in the corral and a cat came in, killed the colt, and dragged him about two
hundred feet. Cats weigh about a hundred and thirty, forty, fifty pounds, so they’re enormously
strong. I became a little bit more careful about where I stopped, and stayed fairly close to the
truck because, of course, there are cats up in that area.
Other than that, never ran into anything very exciting, mainly road conditions. Sometimes you’d have a tendency to try and get high-centered and bridges might be a little bit icy and slick. It was a very interesting year and a half that I spent in the field. Then, I went back into the laboratory, down where the whole body counting was done…

Question: Were you working with Anita Mullen at that point?

Vickie: Yes, I worked for Anita at the whole body counter. I worked for Jack Coogan when I was in the field. He retired, then there was someone who took over at the very end, but basically I worked for Jack, who was a character. The rest of the time I worked for Anita. But, the experience that I got in the field was pretty valuable.

During that time frame, we also, even before I went into the field, when I worked in the labs, we did off-site monitoring for underground nuclear tests. So, we were all subject to being fielded and were, routinely. In fact, I monitored every single test up until the time that testing went down with, I think the exception of one. That was because we were down in Florida supporting the NASA launches, both the Galileo and the Ulysses.

The monitoring experience that I had gained in the field, and also the laboratory experience that I’d gained in radiochemistry, came in very handy because we had about 20 teams out for the first launch. I handled the dispatch of all the teams and coordinated their data as they shipped it back in, monitoring for plutonium-238. Both of those launches were from the Radioactive Thermal Generators (RTGs). Chuck oversaw that whole process. So the field experience proved to be pretty valuable.
Later in my career, before I left EPA and when I did work for Anita, since I’d worked in the labs and the field, I became subject matter expert on some aspects of the environmental monitoring. I wrote articles for the annual environmental monitoring report that EPA did on behalf of DOE. I did that for a couple of years and specifically looked at plutonium, gross alpha, basically. Later on, I did some work with the tritium network.

Question: When you were doing the whole body counting, did you run into people who were CEMP station managers?

Vickie: Yes, we had station managers and we had other individuals who also came in for whole body counts. When you were in the field you normally drove in to the ranches and you got to know them and visited with them a bit. Some more than others, of course. But yes, they were involved in the whole body counting and also donated urine samples for tritium sampling.

Question: People invariably describe that experience as a very pleasant one.

Vickie: Yes, they’d come to town and, of course, they did get paid for their participation. They particularly loved to come before the holidays. And we would do whole families, from children all the way up to, I remember we had, one 83-year-old rancher who came in routinely. Then his health started really going downhill and, of course, you got involved with their lives. He had a hip replacement, and I remember the last time he came in, when I still worked over there, he came in for his whole body count and he was pretty spry. He had recovered from his hip replacement and he told me that the previous day he had been on, I think it was, an 18 or 20 mile
horseback ride back up into the hills and had camped overnight. We dealt with some interesting people.

One particularly interesting fellow, when I worked in the whole body counter, was a gentleman from England. He worked at a laboratory there, Hartfield Laboratory, something like that. He had had some radionuclide uptakes over the years. The initial one at least was accidental, and that was radium. When that didn’t really cause him much of a problem, he actually had some radionuclides injected, which of course you’d never get away with here. But in England, this was an experiment and Department of Energy paid his way and he would visit each of the Department of Energy facilities that had sponsored whole body counters.

He was like a walking calibration phantom. We actually got him on two occasions. It was very, very, interesting. We’d do many, many counts. I remember one thing of interest was he had a distribution, I believe it was of the radium, different on either side of his skull. Radium is a bone seeker. We never could quite figure out why that deposited the way it did. We checked his medical history to see if he had stroke or if he had a closed off artery to one side or something like that. But, we never could figure that out. That was pretty interesting.

Question: They did do a little bit of that research in this country.

Vickie: Yes. Some of it, I think, was not necessarily consensual. But no, he advertised the fact and he was quite hale and hearty and he was in his mid-eighties. It hadn’t bothered him at all. He was a good advertisement, because he was traveling solo. I remember picking him up at the airport, and he did this at least a couple of times and probably more than that.
Question: How did the other monitors, who were predominantly male, accept you?

Vickie: When I actually went to the field with the monitors themselves, this wasn’t a big change, because even though I worked in the lab before, I still deployed on each underground nuclear test. We would all be out in the field, on equal ground, monitoring for the tests. I was a trained field monitor. I was already familiar with all the equipment so it wasn’t a big shock that I came over and worked in that arena. The only problem I ever remember experiencing, and that was fairly short term, was with a technical person who maintained our boards that we changed out in the field. I think he had the idea that a woman was just going to be lost in that arena, and he wasn’t really helpful. Of course, I’d been running laboratory equipment that was far more complicated than what they actually had in the field.

At first, he wasn’t real helpful. If I wanted to talk to him about a technical issue with the Reuter Stokes, he was somewhat condescending. That didn’t last very long. As we got better acquainted and he realized that yes, I could manage those systems quite well, that worked out. Initially, he just kind of felt maybe I was out of my element and then he finally just decided that it was OK.

But as far as the monitors themselves, we had some interesting experiences. I remember one time Kenny Giles and I and several other monitors, too were up in Ely, I believe it was, and his wife called for him and the people at the hotel had screwed things up royally and they told him that her husband wasn’t registered there but Victoria Nieman was. She knew that we were all out there together but I guess she gave him something of a hard time, in jest. We had some real characters. They had to be fairly independent souls because you’d go out for days and days at a time and you were pretty much on your own except for radio contact. You ran into all kinds
of field situations. So, we had some interesting characters, but never really had any difficulty in that regard.

Question: I got to visit the ranch stations with Ken.

Vickie: Yes, they want you to stay for lunch a lot of the time. There were a few that were a little bit standoffish, but not very many, really once they got acquainted with you. It was an interesting period of time. A lot of travel was involved. My husband was very understanding of that. That was good. It was a very interesting experience. I learned to handle all kinds of trucks, that’s for sure. It was good training for supporting the NASA launches and we also supported the federal radiological monitoring assessment program. The EPA had a big chunk of that. We also supported nuclear emergency search team. We had our fingers in a lot of interesting things.

Question: When you were in the more populated areas and you were working the station, did you ever have people come up and interact with you?

Vickie: Oh, yes. That wasn’t a frequent happening because they knew their community monitoring station managers and most of their questions they funneled through that route. On occasion, when you were fielded as a field monitor, sometimes you got those kinds of questions. I know that the monitors got a lot of that when we were down in Florida on the launches, and even around the Test Site. But, most of the people that you interacted with, you were in areas with very low population, came from hunters and shepherders and ranchers. They pretty much
knew what you were up to, so you didn’t really get a lot. But, you always were subject. You were driving this truck and you had all this equipment and that sort of thing.

I remember the Uhalde station was kind of away and it was solar operated. They had cats and dogs and everything out there. I remember the first time I went to service that station, they had built a kind of a cage around it, I guess because the wildlife was rubbing against it or whatever, I don’t know. It was a little ways away from the ranch, and I remember going into the station and this cat of theirs kept following me around and going into the thing. I was servicing the station and as I was coming out, the stupid cat had climbed up on top of the cage and leaped on my neck, just being friendly. Scared the bejeebers out of me, I remember, because out there, you’re away from everything. It was just being friendly, just leaped on me. Fortunately, I had on a denim jacket, because he hung on. So you never knew what you were going to run into out there. It was a very interesting time.
Daryl J. Thomé - Environmental Protection Agency 1964 to 1993

Daryl: When Three Mile Island happened, the President went to the Administrator of EPA and said, “Do something.” So the Administrator scratched his head and he thought, “Well, I have these folks that do this sort of thing around the Nevada Test Site. So he called up and said, “Go to Three Mile Island.” So we picked up, went to Three Mile Island, established a monitoring program very similar to what we did around the Nevada Test Site. We set up a laboratory in the basement of the County Health Department in Harrisburg.

One of the problems of Three Mile Island was poor communication between various federal agencies and the public, and the governor of Pennsylvania. It was about five days before they really got control of the reactor. And nothing really happened outside the reactor, very little came out, but the public didn’t know that. So, we were monitoring, not finding anything, and we had public meetings to tell them that we’re not finding anything. And they were sure we were lying. And they said, “Why should we believe you? You folks at EPA are feds, too.” I’m not sure if originally it was Bruce’s idea. But anyway we were going to the communities, getting science teachers from high school, college, the Bureau of Radiological Health for the State of Pennsylvania, gave them a crash course in essentially radiation biology and a little bit of health physics. Then we took them with us, let them see how we collected samples. They could come into the lab, see how we analyzed the samples, and we gave them the results. Great credibility.

We would have these town hall meetings before that and we actually thought we were going to have physical violence, people were so mad, angry, and upset. And, for us to tell them nothing was happening, there were times when you’re not sure you were going to get out. Actually, one place beforehand, we found several bullets in the bathroom. Nothing happened, fortunately. There was a lot of fear.
Anyway, this worked out great. I’m not sure whose idea it really was, Chuck or Bruce, but Bruce certainly made it happen. So there was a reformed program. All the technical part was handled by EPA. DRI, essentially managed the program. They would go into the community, hire the station managers and alternates, they would get the right-of-ways, pay the utilities, all that sort of thing. EPA would put in the instruments, change the samples, analyze them, and give the results back to DRI, who gave them to the station managers. And so that’s really the genesis of the program. But the idea came out of Three Mile Island. That worked great.

Question: What was your first involvement with the program?

Daryl: I managed the radiological laboratory for EPA for many, many years. And so my people and I processed the samples. Somewhere around 1987, I left the laboratory and took over the whole offsite program, which CEMP was under. So I became hands-on in the late 1980s. And I stayed heavily involved, people who actually serviced the stations worked for me.

In those days, we had zone managers. Ken Giles was one. He was in the offsite area. We had a reduction in force there in 1979. That was the same year as Three Mile Island. So that’s when he came over to the offsite from our research group. And he certainly went to those stations, and in those days we had an active testing program. Ken was responsible for what we call the “zone,” and that was through Rachel and even up to Ely, a big large area.

It was up to the zone manager, of which Ken was one, Don James was another, to know everything in that area: know the people, know the roads, just anything that was going on out there, so when we did conduct a test we knew what was out there. If something happened we
could get to the people. And we had enough credibility, so there was a very strong effort for the offsite monitors to stay in the area they worked all the time. In that facet of his job he would go to the CEMP stations, and he knew the station managers, but he wasn’t really devoted to the CEMP program. Some stations were in his area.

Herb Maunu was the team leader for all the CEMP stations, and we hired route people whose whole job was to drive from station to station and to exchange samples, and Ken didn’t do that then. In those days we had the CEMP stations which were in communities, and we also had monitoring stations at ranches, and now you call them all CEMP stations, which is really a misnomer because it’s not in the community, it’s at a ranch.

All DRI’s stations are CEMP stations. EPA had monitoring stations in every state west of the Mississippi. Certainly not CEMP stations, but we did have an active testing program.

Question: Were you involved with the early public meetings?

Daryl: The very early ones were primarily done by Chuck Costa. When I took over the offsite program around ’87, that’s when I started doing it. Chuck and I both did it for a while and then he started doing it less and less. Bob Taft would speak for DOE, and Chuck or I, in later years, me, would talk about EPA. Bob Taft would talk about how they conducted nuclear tests, show the testing film, and then for EPA, we would talk about how we monitored.

Question: How much did those meetings vary from community to community?
Daryl: Great response variance. Go to Rachel and the whole town would turn out. Women would fix big potluck dinner. I wasn’t sure when I was going to be speaking there but they were great, very friendly, good turn out. We went to Beaver Dam, is that in Utah? Well, right thereabouts, and I think three people showed up. We did one in Lee Vining, California, and it was a pretty good turn out there, but a great number of anti-nuclear folks were there. Very belligerent, very antagonistic. And what we would do, we would give the presentation, then we’d open up for question-and-answers, and then after that it kind of died down. We would stay if people wanted to talk to us one-on-one. And you know, some of them would come up and say, “We get arrested at the Test Site. We were treated terribly. Can you talk to somebody? We should be treated better when we try and penetrate the Test Site.” That was a humorous question.

But they were really antagonistic. You know, did we believe in karma, we were going to die in hell forever, did your mother know what you did, all kinds of bad questions. Well then, after the one-on-one started they came up and said, “This was great. We had a good time. Where’s your next one?” They shook our hands, “Thanks for being here,” and, you know, it was quite a mix.

We found the same thing in Springdale, right outside of Zion. There were many anti-nuclear folks there. They declared that as a nuclear-free zone, whatever that means. But that’s okay. I prefer to be able to speak to things on a logical, intellectual basis, then challenge my point and I will challenge theirs. But, they were there with a hidden agenda and they didn’t want any information, they just wanted a platform to scream and holler from. So we really, in answer to your question, we had a great diversity of number of peoples who attended, and the moods of the people.
The farther you got from the Test Site, the more belligerence you had. Those that lived right around the Test Site, first of all, they saw EPA on a very frequent basis. They had faith that we were honest with them. If we didn’t know something, it would’ve been the guy’s life to tell them a snow job. But, if you don’t know something, fine, tell them you’ll find out and come back and we’ll get the answer for them. We got invited to weddings and funerals and were pallbearers, and we knew those people for many, many years. And Ken Giles, Uhaldes up at Adaven, they literally gave him the key to the place. They said,” If you come by and we’re not home, come on in.” So, we had a very good rapport and that’s probably part of the reason we were so well accepted at those meetings.

Question: I’ve heard lots of stories of early government monitors going into towns in Hazmat gear?

Daryl: Well, how the U.S. Public Health Service got involved was, as you know, we started testing in 1951, and early on it was done by a campaign basis. They’d do a series and then go away. It wasn’t continuous testing like we had for many years. And, either Lawrence Livermore, I think it was, or the military would do the offsite monitoring. Well, it was very early in this period, as the story goes, there was a test in May. You had military folks wandering around in Beatty in full anti-contamination gear. So there were people wandering around with their families saying, “Well, what does this guy know that I don’t know?” So there’s been an outcry that maybe we need an independent federal agency looking after the people.

That’s how U.S. Public Health Service got involved in 1954. Then when EPA came into being in 1970, the function here in Las Vegas was transferred to EPA. And there was quite a
number of us, like Chuck Costa and myself, who were actually commissioned officers with U.S. Public Health Service, who were detailed and stayed with the program. Our philosophy was, we were dressed like the people and we did not tell them stories if we didn’t know. They were certainly our equal out there.

The permanent duty evolved, then, over a lot of years, especially under Chuck Costa’s steerage. He wanted to be sure that monitors would go out there and work. We stayed in the same area. We didn’t transfer them around, so people got used to somebody. If there was a personality conflict, that was a reason to change, but otherwise, we kept them right there.

The CEMP program went through Tiger Team review that DOE had some years ago. Tiger Teams were high-level folks. They’d go into a DOE facility and do an intensive appraisal, essentially, an audit of the program. And they were not nice people. They were there to be nasty and turn over every rock they could. When they did the Nevada Test Site, one came to look at the CEMP and he spent an afternoon with me. I took him over to the station that used to be on campus, by the EPA building. We spent the whole afternoon, and he was very positive. Nice guy. I kept thinking to myself, “That’s not what he’s here for. I’m probably going to get filleted here.” He went back to Admiral Watkins, Secretary of Energy, and said, “The CEMP program is just wonderful. Every DOE facility should have one.” That’s what initiated the one that they had at Rocky Flats and in the state of Washington, Hanford. This program was highly recommended and respected.

In those days, the manager of the Nevada Operations Office was Nick Aquilina. He would come up to the summer training session at Brianhead, Utah and spend the whole week, along with Bruce Church. It’s still held very high in their estimation. Nick really gave it a lot of attention. He would speak at both the summer session in Brian Head and the winter training
session in Las Vegas. The biggest change was when we stopped testing. I haven’t been
involved with the program since 1993 and testing stopped in September of ’92.

At the end of testing there was some discussion between primarily EPA and DOE with
regards to what kind of monitoring do we need to do now. Do we really need stations in Salt
Lake City? I think there was a period there, and decreasing budgets.

Joanne Burrows came on at DOE and asked valid questions about what instrumentation
we should be using. Should we still be monitoring for noble gas? Should we still be monitoring
for particulates in the air? Probably, because then you could say nothing was migrating off the
site. Do you still want a pressurized ion chamber? That’s something people can go see, so it’s
probably a good thing to do. She was looking at deteriorating budgets and had to make choices.
Joanne and I had conversations on what kind of instrumentation you really need. She had
conversations with Bill Fulton and Nate and maybe we were discussing closing stations.

But she was a strong supporter of the program, and she was a manager there at CEMP.
She worked for Bruce Church for quite a while. So I think the end of testing is what initiated the
problems.

Question: Are you aware if the CEMP was DOE’s first attempt at public outreach?

Daryl: No, it wasn’t. I mean, before CEMP, DOE through EPA, we were very, very strong in
public outreach. It was a change of outreach, as I talked about, based on Three Mile Island, and
it was a very positive change, but no, all along we strongly valued public outreach. Actually, in
the very early years of the U.S. Public Health Service, monitors would go out and live in the
communities.
Question: Are the goals of the program different today than they were when the program originated?

Daryl: The way I always interpreted it, I don’t even remember what they were written down as, but they were a conduit to the public where we could get actual information to the public and they would believe us. I suspect it’s the same today as it was then, if that’s the goal. But that’s how I always perceived it, as a way to get all this information to them that they’d believe.

With the talk of the possibility of future testing, I see a couple of important things the program offers. Same things as it did in yesteryear, but the question’s always going to come up. We have these desert storms, windstorms. Is anything migrating off the Test Site? Now, I don’t know where your stations are. I don’t know if you still have one up in Austin or not.

Question: No.

Daryl: Places that are in the prevailing wind direction, like Rachel, that’s really important. What can you document? You’re taking air samples, you’re analyzing them, and you’re not getting things. To me, those are the important things. I think for continuity, where the public sees these stations, you’ve had many station managers for many years. They’ve established rapport with the communities, and if we would go back to testing, you’re not going to get that. They’re talking about October of 2005, we have to be at an 20-month readiness. You can’t buy that credibility with the people; that’s established over a long period of time. And so the program has probably lost the outreach that, other than Kenny Giles, the monitors have in the
whole surrounding area out there. But you have the stations as the foundation for that. So, if the
President in future years says, “Well, we’re going to conduct, in the supreme national interest,
nuclear testing in 18 months,” you have a basis where the people have somebody they can go
talk to and they trust the answer. I think that’s invaluable. I think it’s extremely important today
that we maintain a program.
**Monitoring - DRI Years**

**Lynn Karr - Field Monitor for EPA 1991 to 1999, then DRI since 2000**

Question: How has the function of the stations changed over time?

Lynn: It has changed some over time. Our basic idea still is to have something in the community that looks at the Test Site and see what’s coming off of it. That aspect of it has never really changed. But, with the weather equipment out there, we actually get a little more community involvement. I actually have more people come and talk to me with the weather equipment there because it brings them there on a regular basis. It gets them to ask more questions. It’s a good idea to have the weather equipment because it also helps you look at the micro-climates that are in the area so that, if we ever did go back to testing and actually had a venting, you can kind of see what the micro-climate is doing and look for better ideas where your depositions are going to be.

Question: Why use fixed stations?

Lynn: As it is now, if we had a venting, we’d know what the background should be for each community because a fixed station was there. And, I think that was the main idea, to keep a good background, keep it there, where the public could see it. We tried to put the stations in locations that give you a good idea of what the community would be receiving. The original idea was to keep the PICs, there was a formula figuring the distance away from the building so that, if there was deposition, it would land on the PIC itself so you could see it. With the low volume and the high volume air samplers out there, you could see that as well.
Question: What kind of interactions do you have with the communities when you are at the stations?

Lynn: Kind of varied. Some places the community is really excited about the stations. They like the weather information. They ask you what’s going on. I get a kick out of the places, well, like today, I just stopped and fueled up and the attendant saw the DRI sign and the first question out of his mouth, “hey, how’s the radiation today?” Well, still background. Then, what does that mean? You have to explain what background radiation is, what the levels are, what all that means, how it all fits together. And I don’t know personally, I take it that my job isn’t to convince people about radiation one way or the other. My job is to give them the information to allow them to make a more intelligent decision on their part of what they think of radiation. So, they have the facts in their hands and they can make an informed decision. I’m not out there to convince them that nuclear power is great or that nuclear power is bad. Just this is what radiation is or this is what the Test Site did and this is what we monitor.

Question: Has anyone ever asked a strange question?

Lynn: “Why the hell didn’t we tell them the earthquake was coming?” I was working at the St. George station, and a guy saw the barograph. We have the barograph out there to track weather patterns because when you have major low pressures, we’ve noticed that you have a bump up in background. It’ll jump sometimes several microroentgens per hour as the low pressure comes through. And, as the high pressure comes through, it goes back to a normal reading. And, you
can directly correlate them. So, we put the barographs out there to correlate them. Well, he saw the barograph. He thought it was a seismic detector. So, with all the seismic gear and the fact that I worked for the United States Geological Survey (USGS), we should have, by God, been able to tell him about that possible pending earthquake that hit Springdale and wiped out some homes. Boy, was he mad at me.

I explained, “It’s a barograph.”

“No,” he insisted, “It’s a seismic.”

“No, it’s a barograph. It looks at pressure.”

“Yeah, looks at seismic waves.”

“No, it looks at the pressure in the atmosphere and tells you whether you got a high or low pressure coming in, whether you have a storm coming in or going out.” Well, listen, I said, “it’s for radiation. And, that over there, that’s an air sampler.” I probably talked for a good 15 minutes explaining the station. He was still pretty mad when he left, but at least he understood that I wasn’t with the USGS station.

Question: You’ve been very involved with the training?

Lynn: One of our first training exercises I actually got permission from the Brian Head hotel and I took sources up and I hid them. I hid them outdoors. I had to be very careful because we actually found some rocks that were hotter than the sources. And, going back and finding them was interesting at times. But, Jeff was out there and, I think, Ken was out there on that one, too. And, we actually had our guys with them so they could go out and collect soil samples. They were getting readings. We had hot spots for them to find. Our scenario was that some local kids
had found the radioactive source for an old x-ray machine and they had broken it open and had contaminated the backside of the hotel. And, that we wanted them to go out. We wanted them to collect the samples. We wanted them to get the data. We wanted them to find out what was going on and then come back in and be somewhat discreet about it while we’re out there doing it.

Question: Why do you use solar power on the stations?

Lynn: We use solar energy to power the data logger for several reasons. One, it’s clean power. And, people say, oh, you’re trying to be environmentally conscious. Clean power refers to the actual power production itself. Power can be spiky and that’s called dirty power. Solar power, by charging a battery up and using the energy from a battery, it tends to be fairly even and doesn’t jump around quite a bit. We’ve had several dirty power problems in our locations and the dirty power messes with the electronics. By doing this, we eliminate a lot of those problems. The major reason we went to solar was, if the power goes out, we’re still collecting data. So, in a time of emergency, let’s say a venting, during the testing days, a venting would actually happen, this could collect data 24/7 (24 hours/day, 7 days/week) without worry of whether or not they shut the power to the city or something happened. We’d still be collecting data to let us know how safe it is or isn’t.

Question: What quality assurance procedures are in place?

Lynn: We have a chain-of-custody set up for the samples that we take. A chain of custody guarantees that we know where a sample has gone and who has handled it. When a person starts
a sample, as with one of our air samples, a chain of custody is started. The air sample is put on a chain of custody and even the barograph paper can be put on a chain of custody. The duplicate air samplers are also collected on a chain of custody. This chain of custody gives you the start time, the person who started it, and the person who actually physically started the sample signs a chain of custody. At the end of the week or the end of the collection time, the person who collects the sample, again, signs the chain of custody. We then mail that into the DRI office. When Craig Shadel, our Quality Assurance Manager, takes custody of the sample, he then signs and dates it, showing when he took custody of the sample and we use that chain of custody when we send them on to be taken care of by the lab. They then sign the chain of custody so you can show where that sample has been its whole history.

QA-wise, for quality assurance, we have duplicate air samplers. So, we keep at least 10 percent of our air samplers duplicated. In this case, with about 20 stations that have air samplers at them, we average two duplicates out at any given time. A duplicate is taken to a station, it's set up, it's run for three months, is torn down and moved to another station. We actually have four duplicates set up. I set up a duplicate in Cedar City, Utah. When it’s time for it to be moved, the month before, I’ll set the next duplicate up in the next location so that, at the first of the month, that person can start it. Then, in the middle of the next month, I come and pick up the other station when I do my normal route. This gives us a little bit of an overlap and I’d rather have the overlap than underlap, in many cases. By moving different equipment around, we also help to randomize the sample.

Question: Why keep the stations if we’re not testing?
Lynn: Well, you’ve got a very good platform out there and we actually do help the Test Site management stay in their compliance by showing that they’re not having releases. If they would have a release for whatever reason, we’d still be able to see quite a bit of it. And, by us being right around the perimeter around the Nevada Test Site, we help with their compliance situations. Also, I’ve noticed, too, that the communities, when they talk about taking it away, get upset because then they think that’s when they’re really going to do the stuff at the Test Site that they’ve been waiting to do for years.

Question: What do you see for the future of the program?

Lynn: I think it’s a program that could be marketed throughout the world. We have one of the better websites out there for explaining what it is we do. And, I think Greg McCurdy has done an excellent job of putting together some website information and getting things out in public. I think this is a program that could be used in areas that have radiation concerns. I also think it could be a program used in communities with any environmental concerns. Because a chemical plant, for example, if the community was concerned, it would not be that difficult to set up a weather station, a data logger system, and some possible sensing equipment that would sense their possible pollutants and probably help show the community just how safe they, more often than not, really are. I think it’s a program we can even sell to different parts of industry for the same reason. If you want to do something. Well, here’s a way to show the public that you are doing what you say you’re doing. And, I think, as long as the Test Site exists, as far as the communities right around the Nevada and Utah area, I think we have a role to play. Even after the Test Site ceases to exist, there’s always the public concerns and perceptions of what went on
and what is going on. The Nevada Test Site is such that I think the public will always be nervous that something is going to come off the site. We’re there to show that no, it’s not, and if for some unforeseen reason something would happen, we would be there.
Ken Giles - Field Monitor for PHS/EPA 1964 to 2001, DRI 2001 to Present

Question: What was your first involvement with the community environmental monitoring program?

Ken: You mean, with EPA?

Question: Yes, if that was your first.

Ken: Yes, it was probably 25 years ago, when they put these stations out in various places. It wasn’t called the community environmental monitoring program then, but, basically, the stations were the same as they are now. Actually, EPA had more equipment on them than what we have now. And, when they closed the EPA farm, I moved in to be a monitor and then, eventually, got to be a supervisor. Don James and I each had a territory. My territory was Utah and Nevada up to the Grant Range. James had everything from the other side of the Grant Range through California and back to Las Vegas. And, we had four or five monitors that worked for us and we did everything out here. We did the milk and water sampling and maintained all the equipment, TLDs, personnel, and the station TLDs and public relations. We did everything. So, I guess, that was my first involvement with it.

Question: Have you ever been involved in choosing any of the community monitors? Did anybody ask you for a suggestion as to who you thought might be good?
Ken: Yes, a lot of times, DRI would come to us, we’d have to hire somebody. They would come to us and say, “well, the Station Manager is leaving and we need a recommendation who to replace him with.” At that time, DRI wasn’t out here and they didn’t know who the people were, so, we’d make the recommendation who we liked, who we could get along with, and who we thought would show up. It didn’t always work out.

Question: Do you think the goals of the program are different today than they were when the program originated?

Ken: Yes, when the testing was going on, it was primarily monitoring and public relations was kind of a secondary thing. Now, I think, public relations is primary and monitoring is a secondary thing.

Question: What do you see for the future of the program?

Ken: Well, I think, it’ll probably stay pretty much like it is unless testing comes back. If they start to do testing again, it may expand a little bit.

Question: Did you ever get any feedback from protesters while you were working the station?

Ken: Not really. I’ve had people come to the station and want to know about it and they might be against the testing. But, they never really got adamant or violent or anything like that. Yes, they just say, “We don’t believe in it” and I’d say, “Well, that’s up to you, but this is why we’re
doing it.” Most people, even if they were against the testing were happy to see that there was a monitoring program going on. A lot of them didn’t know that DOE, and EPA, and DRI were doing any monitoring like this. They just thought, they’re just setting off bombs and nobody cares.

So, to those people, I would try and spend a little more time and explain the things we were doing with the animals and with the farm and the different types of monitoring and a lot of people would stick around for a half hour or forty-five minutes while you explained the monitoring programs to them. I don’t think you ever got somebody that was against nuclear testing and turned them around so that they were for testing. But, I think it enlightened a lot of people that had no clue at all that anybody was doing any monitoring.

Question: Why do you think the community monitoring started when it did?

Ken: There were air samplers out at people’s ranches. I think, Three Mile Island was a big eye-opener because I was one of the monitors who went to Three Mile Island. I wasn’t one of the first, I was working at the farm. The first group went there and I relieved Don James after six weeks and then I went back again another time for a month. That’s where the idea kind of started because there was so much confusion. Everybody, the state, the EPA, DOE, and the Nuclear Regulatory Agency were all telling basically the same story but in different ways. This confused the heck out of the people back there that were scared already. There was a big confusion about what was going on and, when I got there, people were just happy to see the EPA monitors. We had an air sampler set up at this one farm and this lady came out and I thought she
was going to kiss me. She said, “if you need your laundry done or anything,” she said, “just bring it by.”

That’s kind of how it got started so that there would be somebody in charge and there would only be one source of information so you didn’t have all this confusion, the state wasn’t giving their version and DOE and everybody having press conferences.

As far as I’m concerned, the radiation levels were blown out of proportion. I read some reports and the amount of radiation that the people received from Three Mile Island, because their natural background is so low would be about equivalent to what they would get if they moved to Denver, CO, and lived in Denver for a year. The radiation background in Denver is higher because of the rock and the high altitude.

Congress had all these meetings. Somebody from EPA went down and brought some survey instruments that we were using in the field down there. They had one of these old stone buildings that had been built around the turn of the century that they were having the meetings in. When they turned the instruments on, the natural background was higher than the readings at Three Mile Island. People were just panicked because of the news and the different stories and they didn’t know who to believe.

Question: What kind of reactions have you seen from people when a station is removed or threatened with removal?

Ken: When EPA and DOE came to a parting of the ways, these ranchers out here kicked up a real fuss because they didn’t want people on their properties they did not know, they wanted to
stay with EPA. That was one of the reasons DRI hired me. I knew everybody and they knew I helped build most of the stations. So, it worked out just great for everyone.

Question: What was the milk and water sampling like? How frequently did you do it? Why was it stopped?

Ken: It was in conjunction with the testing and was done on a monthly basis. The milk testing started back in the atmospheric testing and Plowshare days. One of the products from the testing is iodine-131, which has an 8 ½ day half-life, but it also concentrates in the mouth and in the thyroids and, on cows, is excreted primarily out through the milk. Then, if kids drank the milk, they would get exposure to 131.

There had been times, during the Plowshare shots, when we would go up to Lund or to Alamo and cover the hay before the shots so that it wouldn’t get contaminated. Then, we’d buy the milk for a week so that it didn’t get someplace where people could drink it. They would also divert the milk from being Grade A, to send it someplace where they would make cheese. Because, in the process of making the cheese itself, the 131 would decay out and, by the time it got on the market, it would be safe to consume. That’s why the milk and water sampling took place.

Question: Did that stop when the testing stopped?

Ken: It went on for a couple of years after the testing stopped. Then they got to where we only did it once a year and then, finally, stopped it altogether.
Question: Was there always PICs?

Ken: Not always. The PICs came in probably 20 to 25 years ago. They weren’t available before then. After Three Mile Island happened, they started looking around for some other type of instrumentation to put out. The PICs and the electronics that supported the PICs were just coming on the market then and there were some nuclear power plants that were using them. Herb Maunu and, I think, Bruce Church was instrumental in it, supporting it from DOE side of it. But, Herbie Maunu, Costa, and Jack Coogan and some of those guys pushed for it and we put them out.

Herbie started putting them out around the Test Site and then the university and DRI got involved in it and they went up through Utah. Because of the down-winders, we put them in Utah. The stations around the Test Site were the first ones to go in. I think, Rachel and Alamo were probably two of the first ones that went in. Before then, we just had air samplers and TLDs.

In the early days, when there was fallout, they would have fallout trays, which were just a flat piece of metal that had sticky stuff on it so that when the fallout landed on it, it wouldn’t blow away. They were only an early attempt to gather the radioactivity primarily to see what it was more than how much it was, what was actually coming out of the bombs and out of the devices. They were all about a foot square, something that they could do the physics and calculations on. They had some kind of sticky goop on them. It was something that you painted on, but it was sticky. So, that when the cloud passed right over, any dust or anything that settled
out would stay there, it wouldn’t blow away. They were put out at different distances to see the size of the particles.

Question: How has the function of the stations changed over time?

Ken: We had tried to get meteorological equipment on the stations before DRI took over. I had about five or six EPA stations that had meteorological equipment on them. That was kind of tied into the testing, too, because, when there was a test, the weather equipment told you which way the wind was blowing. But, due to funding, we couldn’t do all of the stations.

Question: Why were the first stations placed as they were?

Ken: The reason they were placed there was because that’s where people lived. There was no use putting a station out here in the middle of the desert if nobody’s around it. So, where there were population centers and ranches, that’s where we were trying to monitor and protect.

Question: Did you ever get any feedback or community response about the program?

Ken: Not so much the ranch stations because there’s no general population there. But, at the stations in a town or community, you got questions, especially from out of town visitors. Some people don’t know testing is still being conducted.

Question: Did you go to any of the town hall meetings?
Ken: They had pretty much of a standard program. DOE would get up and they would talk to them about testing, and the EPA would get up and they would talk to them about what things EPA was doing to protect them from the testing. DRI would tell their part. The station managers talked about writing some of the reports. Then people would have questions on the testing, how harmful was it? A lot of it got into where the water was going and, sometimes, when Yucca Mountain came about, they would have people that knew something about Yucca Mountain. You would get the same questions about the water, is it going to be safe to drink? Those were the types of questions. Because the testing had been going on so long by the time we started doing this, people were either for it or against it and you weren’t going to change their minds.

Question: Why were fixed stations chosen as opposed to some other way of monitoring?

Ken: There was a lot of other monitoring going on. I was on the Test Site and checking deer for radionuclides and we were buying cattle from the ranchers and checking them for radionuclides. We were getting samples from people’s gardens at least once a year. We would come out and get root crops like potatoes that grew underground. Then we would get crops that grew above-ground like tomatoes and beans and peas. All that was happening plus there were station TLDs scattered out all over the country, not just at the community monitoring stations like we have now. There was probably about five of them just on steel posts scattered between Ash Springs and Warm Springs, plus at stations, and then we had individuals in the community that were wearing TLDs, personnel TLDs.
Plus, all the monitors that went out for shot support had portable equipment. We all had portable air samplers and, when a shot went off, we carried 25 station TLDs and about 10 personnel TLDs. So that, if something happened, they would say the cloud is going to go in such and such direction, we could start putting the monitoring equipment out. And, we had portable generators so we could stop along the road and start an air sample, letting it run a couple of days if we wanted to.

There was a lot of different monitoring done. EPA had a stand-by air sampling network throughout the western United States. There were one or two air samplers in people’s homes that didn’t run constantly. They would start them up once a year and send a sample in for a background sample, or they might run it for a couple of weeks. That also kept the people up to speed on how to start them and fill out the paperwork. But, every state west of the Mississippi had one or two air samplers in it. When something would happen like Chernobyl, EPA fired up the stand-by network sample. The first readings that we got from Chernobyl were from some stand-by air samplers up in Oregon and Washington area and then we were able to detect it in the water samples from Mount Charleston.

Question: How would you characterize your relationship with the ranchers?

Ken: Well, Roy (Clifford) told them that if they didn’t hire somebody that he knew, that they could take the damn equipment and get the hell off of his property. When I worked for EPA, they were pretty good. One day they called Don James in and said, “Marguerite just died,” Roy Clifford’s sister.(Cliffords was one of the EPA ranch stations) We were going to take leave and go up in our own cars, to go to the funeral. Well, I went to the boss, Chuck Costa, and said,
“Can we go to the funeral?” His response was, “Yes, take the truck and go up.” So, we went up. When Roy’s Mom died, I think James and one of the other monitors were pallbearers.

Chuck Costa had a good background. He had been a monitor. He had good ideas on how to get along with people. He wanted the monitors out. He wanted us in the field, interacting with the people. We used to do a lot of favors. Somebody would need something from the store. We would say, “we’re going to Tonopah and we’ll be back this way tomorrow, want us to pick it up?”

When I used to do the Ely route, I’d go up to Alamo, Caliente, Pioche and then I’d go into Ely and spend the night. I’d come down the next day and I’d do the Complex, Uhaldes, and Rachel and back in. In the winter time, after Helen Uhalde had moved to town, when I’d get to Ely, I’d call and say, “I’m going down to the ranch tomorrow,” and she’d say, “oh, we’ll be right by, be right out.” She has two daughters that live in Ely and they’d go grocery shopping and they’d send stuff out to the ranch or, if her son needed parts or something, they’d bring them by the motel and I’d put them in the truck and I’d take them down.

And, talk about the trust. I was at Uhalde’s and Helen would always have me in for coffee. I was there one day and she said, “now I’m going to show you this.” She had a cupboard back there where she had this whole big ring of keys. She said, “these are the keys for the place. If you come in here in the winter time and there’s nobody here, you break down or you get snowed in, these are the keys if you need to get in the shop to fix something or you need parts or something,” she said, “this are where the keys are.” I said, “well, hopefully, I won’t need that.”

She said, “you just come and make yourself at home. I know you know how to cook. The freezer is full of food down in the basement.” She said, “if you starve to death here, it’s
your own damn fault.” I said, “Okay.” But, I had known her for a while. I had been running that route for about a year.

For one of my first jobs as an off-site monitor, they had me come out to Diablo maintenance station at 6 o’clock in the morning. The gate was closed, they had a fence around it, so I’m sitting outside and pretty soon this lady pulls up, it was of those shots that was unannounced, supposed to be a secret, this lady opens up the window and says, “hey.” I rolled down the truck window and she said, “what are you doing sitting out there?” I said, “well, I was supposed to be here at 5:30 in the morning and stand by.” She said, “oh, get your ass in here.” I said, “well, I was supposed to stay on the radio.” She said, “oh, get your ass in here,” she said, “the shot is not going to go off until 8 o’clock,” she said, “you got time for a cup of coffee.” So much for the secret. I said, “okay, I’ll be right there.”

There’s a woman who used to live out there all by herself, south of the Uhalde’s there in the hills. They affectionately called her Crazy Carol. She’d been married a couple of times and she’d been a legal secretary and she just got tired of the big city life and moved out there. She had a bunch of cows and some goats, dogs. Anybody that had a stray dog, she’d adopt them. One time she had 25 to 30 dogs in there. Every time you’d go there, she’d con you into helping her do something. I was there one time, the shot was delayed, so, I was working part of Garden Valley and James was working the other part. She said, “I’m going to fix you lunch.” And, I said, “okay.” She said, “Where’s that James at?” I said, “Oh, he’s over at Freiberg’s.” “You call him on the radio and get him over here. I’m going to fix you guys lunch.” So, I said, “okay.” I called James and he came over.

I said, “what are we having for lunch?” And, she said, “biscuits and gravy.” I said, “oh, okay.” She had all these cats in the house and there was this big old cast iron skillet sitting on
the floor with a cat curled up in it. She grabbed the skillet, poured the cat out, and took an old rag and wiped it off and put it on the stove and made some homemade biscuits and gravy. James said, “damn you, Giles,” “I hope you don’t ever invite me to lunch again.”

Then, another time, we were both there and she made us bologna and cheese sandwiches. But, James likes cats, it’s the only way you can get away with it. He was sitting there at the table with his sandwich and he’s eating off one side and this big old white cat with blue eyes was standing on the table eating the bologna off the other side of his sandwich. It’s always fun. I got to where I would buy something for lunch in Alamo and I would take it up there. So, I was buying lunch for Carol. She’d make cowboy coffee, and I grew up on that. You just pour a bunch of grounds in a pot and boil them. I figured that was okay because any germs in there had already been killed.

Question: Have you ever seen anything strange in your travels?

Ken: Yes. One time on the Test Site, when I was doing the deer study, security had my phone number because they were supposed to call me if they found any of my deer that had the radios on them or any roadkills or anything that we could get samples from. On a Friday night about 9 o’clock, one of the security guards called me. He identified himself and I knew who he was. We talked for a minute and he said, “This is going to sound kind of strange,” but he told me who the guy was and he’s the guy that drove the food truck from Mercury up to the mess hall in Area 12. He said, “Down by Captain Jack’s Springs, this guy’s seen Bigfoot.” And, he said, “we know that you’re always out there running around at night running your spotlight, hunting deer and we want to know if you’ve ever seen Bigfoot.” I said, “Right in that area where he’s talking about
there are wild horses.” I said, “He didn’t see the south end of a northbound horse, crossing the road?” He said, “no, he claimed. That’s what we asked him.” He said, “we grilled this guy for about six hours and he swears that he’s seen Bigfoot.” I said, “What did Bigfoot look like?” He said, “He was all covered with hair, dark-complected, and about 6 ½ to 7 feet tall.” I said, “For heavens sake, you’ve described half the people who work in Area 12.” He said, “Yes, that’s what we thought.” And, I said, “I haven’t seen any Bigfoots, but if I ever see one,” I said, “I don’t think I would tell you unless I had run over it with the truck two or three times so it was going to be there when you got there just for this reason.” I said, “No, I hadn’t seen any Bigfoots.” But the funny thing about it was that about a month later, there was a Bigfoot sighting in Utah.

Some smart guy got some stencils of some big feet and painted big green footprints across the road. I’ve seen a lot of strange things flying around out there at night, but every air force and navy in the free world flies on the range at one time or another. You can see some strange looking airplanes, but, when you get up close up to them, they usually belong to the Germans, or the Brits, or the French.
"The Nevada Operations Office of the Department of Energy (NV/DOE) seeks assistance in the training of selected individuals in the sampling, preparation and radiation counting of specified airborne radioactive materials. It is assumed that persons chosen for this training will have a basic background in science (i.e. mathematics, physics and chemistry typical of a high school science teacher) and with a comprehensive training course consisting of lectures, demonstrations, films, laboratory and practical work and evaluative testing will be prepared to function as independent site operators for air monitoring of radioactivity as required by the appropriate supporting government agencies."8

Question: How did you first become aware of the community monitoring program?

Dr. Gary Sandquist stands by the station in Salt Lake City.

Dr. Sandquist was responsible for the training given to the Station Managers 1981 – 1994.
Gary: Bruce Church was a graduate at the University of Utah. After he graduated, he worked for Bob Pendleton, who was a radiation safety officer at Utah. We both knew him very well. Bruce went to DOE Nevada and started working. He was involved with environmental aspects and impacts associated with weapons testing at the site. What had happened was, back in the 80s, there was a venting. An underground test vented and caused a public stir. People were already so traumatized and they believed there would be impacts associated with this. Bruce called me on the phone and said he had been thinking about a plan to address public concerns. He wondered if University of Utah would like to participate in his plan since we were the largest major university in the area. Also, Utah had been a prime critic of the Nevada Test Site operations.

Bruce said, maybe we can calm the problems here, and he wanted somebody he thought was technically competent. If you just go talk to a downwinder in southern Utah, obviously, it would have never worked. Bruce and I sort of negotiated and we came up with an idea and he said, “Now, what’s, and Bruce was very good about this, what’s very important is that I want these radiation monitoring stations out in the community handled by people who are competent, in the community, and that are known. He said, “I think the best people would be high school science teachers.” I agreed with him.

I said, “The kids are there, put the stations at the schools, people tend to know their teachers.” You could come by and say, “I’m concerned about this radiation release.” And they know Charlie who teaches at the school. You have a lot more confidence in local teachers than in somebody who flies in from Las Vegas and says, “all is well” in a small community in Utah and then flies back to Las Vegas.
So, Bruce and I worked on it and came up with a proposal. Bruce said, “I want the training for these people not to come from the Department of Energy and I want technical direction,” to some extent. Now, EPA was obviously still going to analyze the samples because they had the facilities. “I’d like to have the University involved.” So, I said, “We’ll provide the training, put on workshops, we’ll interact with the teachers.” At least once a year, usually during the summer when the teachers were available, we will conduct an intensive training session. In fact, I think, the first few years, we had two weeks of training. We brought the people up the first year to University of Utah and they stayed on the campus. We went through a lot of material, we used equipment, we did analysis. Probably, early on, training was more technical than it should have been.

The Community Radiation Monitoring Program was really Bruce’s brainchild. He brought together DRI and the University of Utah. He had to have EPA because they were technically competent to do the analysis on the samples. DOE funded the program.

It was hands off to a good extent. I told Bruce, “Now, one of the concerns, Bruce,” I said, “if DOE exercises too harsh a hand on this, it isn’t going to go.” And, he said, “I agree. You teach them whatever you need to.” He said, “You may find some criticism about DOE’s past activities. I know we have done some things in the past that we would not do today.” We proceeded on that basis.

I talked to the University of Utah administration. There was some political sensitivity about nuclear testing. They said, “We still answer to the governor’s office and they were sensitive. We don’t want them saying that this implies that the University of Utah endorses nuclear testing.” I said, “No, all I’m doing is providing training.”
Question: The University was concerned about that?

Gary: Yes, some of the people in administration were concerned. It was a hot item at the time, downwinders, lawsuits. In fact, I think there’s still something like half a billion dollars worth of lawsuits against the Department of Energy for those who got cancer in Washington County and surrounding areas. Now, maybe they’ve been settled. I guess, they’re pretty well put to rest.

Question: Why did they want the University of Utah to be involved?

Gary: I felt that the University was able to provide good, competent technical training. Science is sort of blind, in a sense. You measure radiation independent of, hopefully, the biases of people. It’s a quantitative science and you put the numbers to it. So that’s how I first became involved in the training. Because Bruce approached me and asked me. We knew each other. He felt that we had the resources and the background to do it.

Question: What were the early training sessions like?

Gary: They were probably a little too technical. I treated training seriously. This was a growing position on the part of Bruce and me. I said, well, I’ll treat them like engineering students. We did that and we gave them during the first couple of years, very intense and very detailed instruction. How to perform analysis, we actually did some equipment runs and other things. After time, that sort of slowed up because EPA did most of the analysis. Our people did not need to. I kept arguing, though, and Bruce supported me in it, even though they don’t do the analysis, they need to understand it.
They need to know, what are you doing, because it isn’t black magic. If a visitor came out to one of the station managers and challenged him and said, “Well, how do you know it’s even reasonable?” They could respond, “I’ve got some equipment on my site and I can interpret these measurements and they’re consistent with what data I’m getting back from EPA.”

Question: Do you remember Beverly DeWyze from Delta?

Gary: I do, yes.

Question: She still talks about the way you were teaching the ABCs of radiation. Do you remember that? She says she still uses that and found that very helpful.

Gary: She was a great manager and she handled herself well. Beverly was a charmer, she interacted with the people, she had them in, she supported her students. She was just very effective. Bruce and Nate were both very impressed with her.

Question: One thing that people mention about the early training was something you organized for the trainees, an outing to Brigham Young’s house? Some of the people have mentioned that and said what an amazing experience it was.
Gary: That was the one in Salt Lake. Had a little bit of a problem there, to be honest with you. We had one of the early DOE persons and I can’t remember who he was. But, anyway, we were going to have a dinner that evening. And, we didn’t want to have it at the University, so we would have it downtown. I’m a Mormon and I said, “Oh, I’ll just call the Lion House, that’s what it’s called, the Lion House is where Brigham Young and his wives lived a long time ago. It’s a very nice restaurant. So, we went down there and it was a lovely meal but the DOE person, who only stayed for another year or two, was a heavy smoker and he wanted to smoke in the dining room at the Lion House. They came through and told me and they said, “You know our rules and you can’t.” I tried to artfully approach him and said, “Look, can’t you just kind of wait until we get outside.” This is, remember, this is 20 years ago.

So, I had to walk him outside and we stayed and chatted for a while the others finished their meal. It was a great meal. It was well done. And, Bruce seemed to appreciate it, too. It was a little tender. I remember that from the point of view of this sticky situation, trying to handle it. Being a Las Vegan, he had lived there for a long time, he felt no public establishment should be able to tell you that you can’t smoke inside their restaurant.

It was very nice, that first training at the Lion House. It’s next to the Church Office Building. It’s been there since the 1840s. The church conducts tours and you could see a lot of his memorabilia. Bruce was Mormon, too, so, we were both familiar with it. And, when I told him, he said, “That’s great, let’s go to the Lion House.” He said, “They’ll be able to say that they’ve seen it.”
Marg Herndon on the first training: Gary Sandquist operated his station under a subcontract directly funded by DOE. The training took place on the University of Utah campus. Since it was summer, we were able to have the CEMs room at the dorms for the two weeks. They had a big enough place to house everybody. There was always a DRI person present at the training to take care of the details – usually Margie Jones or myself. One neat thing that we did while we were up there, one evening, Gary Sandquist made arrangements for us to have dinner at the house where Brigham Young lived.

Question: What were you trying to convey to the early trainees? What did you want them to take away from the training?

Gary: I was hoping that they would, although they would not perform sample analysis themselves, understand the measurement and they could explain it to others and feel confident and believe the data. That was the most important thing. Bruce was very assertive about that. He said, “I want the Station Managers to believe the numbers and the data and our ability to perform the experiment. If they think that it’s just a matter that they’re part of the choir and they’re singing whatever the government tells them, that won’t work. Because, when they talk one on one with a farmer who knows one of the station managers, and sits down with him; if he says, “well, I really don’t understand it or know what it’s about but that’s what they send out of
Las Vegas and here’s what EPA gives us as numbers,” then it wouldn’t work.” Because you
could read that on a one-to-one basis and Bruce says we’ll never know because that will be a
private conversation, just in that area.

But, can you really convince the Station Managers that what they’re doing is sound,
honest, and technically correct? Bruce was good that way. He let me have, pretty well, a free
hand. We even brought in critics of nuclear testing. We brought in a woman who headed up the
downwinders in Washington. We invited her and she came in. It was interesting when we
brought them in. They were at first concerned that they’re going to meet a real hostile crowd.
After a while, they got there and they saw there’s women, there’s people like Beverly DeWyze,
who’s a mother. They said, “we think our family was harmed,” and they would get together and
chat afterwards. Our managers interacted with people who were very hostile about this, and had
strong opinions. They learned a little skill, how do you handle this, you’re sympathetic, you
understand. We had one mother in who said she had lost one of her children and a husband, and
that’s hard to argue with. All you can say is, well, we don’t think nuclear testing was the cause,
but we can understand your feelings and we’re certainly very sympathetic.

Rusty Taylor - Cedar City Station Manager on the training: When
I became more interested in the program in general was the first
time I went up to the Brian Head retreat that we had up there
because that's when I realized, this is actually a pretty big
program. There's a lot of people involved in this. It's really
important with what we're going to do. And, that gave me much
more of a sense of how the whole program fit together as opposed to just thinking I’m sending in a couple pieces of paper.

Question: A bit about the station in Salt Lake, when did that go in?

Gary: It went in early. I was a little surprised because they were expensive. That was one of the big items and Bruce had to work hard to convince the DOE management that this was a good thing to do. Each of the stations represented an investment on the order of about $50,000, by the time they were installed.

I said to Bruce, “You and I both know that no fallout is going to show up in Salt Lake if you don’t see it in Delta and the rest first, that’s a long ways away.” He said, “Gary, politically, that’s very important. That’s the capital and more people live in Salt Lake.” He said, “I hope and expect that you will run people through the station.”

Then, when we have training, we had assumed, to be honest with you, that we would do most of the training in Salt Lake. The Station Managers would go out to the station in Salt Lake, see it, interact with it, and describe it. It turned out that travel cost and putting up the Managers was so much more expensive than Las Vegas and, to be honest with you, they preferred to go to Las Vegas or to Brian Head. Because it was Las Vegas, there were many more things to do with their families.

But the station in Salt Lake was still important. We never saw anything in Salt Lake except the iodine release from Chernobyl. EPA monitored that event also. I think that lent a little bit of credibility because some people probably thought, well, this station never sees
anything. And, when it occurred, we saw the iodine-131 cloud that came out of Chernobyl. It was a weak signal and it required careful analysis to witness.

Question: For many of the Station Managers, that was the one event they’ve really seen. It did test the system in a way.

Gary: It worked.

Question: So, when did that station get pulled out of Salt Lake?

Gary: The station is still there. What happened is that Bruce was gone, and I was out of the loop. And, for a while, it had looked like DOE would cannibalize the stations. I made a pitch to Bruce and Bruce agreed. We said, “look, an investment has been made here. Why not leave the station.” I said, you know what will happen if they go back to Las Vegas. They’ll go into dead storage. They’ll simply be pilfered, lost, cannibalized. I said some of the schools are probably willing to continue to use them. They won’t have the analysis capability but the equipment is still there. For example, a PIC, the pressurized ion chamber, is functional. It doesn’t require any support other than electrical power. So, most of the stations, except maybe some in Las Vegas, were left intact. Now, some of the equipment was not used any longer because it required liquid nitrogen or other items to operate them. There was an air filter pump that pulled air samples which could be counted. The pressurized ion chamber, we actually use for environmental control at the University of Utah. We have a research reactor there.
My Radiation Safety Officer at the University used our PIC as a reference to determine what the background environment was around the campus. Because people were concerned about not only my research reactor but just above me, about a quarter of a mile, is a medical school that uses isotopes in medicine. We have residents who live within a few blocks below the reactor and there was concern, “how do we know the hospital isn’t releasing materials?”

Question: Yes, Dell Sullivan from Alamo mentioned your reactor. He said, “Gary Sandquist’s got a reactor up there.” I wasn’t aware of that.

Gary: He’s right. Yes. In fact, we did have a tour or two, they got to see a reactor. Some people are intimidated by it. They’re afraid to tour it, and would they survive seeing a reactor? It’s a swimming pool reactor and you can see down into the core. They got a pretty good education from the point of view of nuclear reactors. I like to think, and Bruce supported me in the sense, that this provided some positive input to students. They got a first-hand look and some of the teachers within the area, like Delta and others, have brought students up to see the reactor, high school excursions.

So, the station hasn’t been removed. Now, only the air monitor and the PIC are operational, the other equipment is static. But, the station is there and it’s available to start up.

Question: You became not only a trainer, but a Station Manager all at the same time?

Gary: Yes, I was. Bruce wanted me to serve as a manager too. I was Station Manager and that meant we had to provide data for Salt Lake City. Bruce said, “I want to see if what we’re asking
Station Managers to do is too onerous.” So, I did everything that they did. We’d send in samples. EPA would come up and check the equipment. We had some problems along the way. I think, one of the gardeners ran a lawn mower into the post and loosened the PIC, but didn’t hurt the instrument. And, there were some equipment change outs. The pump vanes on the air filter wore out and had to be replaced.

Question: Did your involvement with the program change over the years?

Gary: Yes. Nick Aquilina left, then Bruce left. Hazel O’Leary was appointed the Secretary of Energy. Her attitude was, in a sense, DOE has sinned and must repent for past activities. So, DOE turned into a repentant agency. That’s not to say that DOE didn’t have problems.

But, as a result of that, it looked for a while like that’s when they were going to purge the stations, remove everything, take it back again. And, because I think it was maybe informed to Washington, this is part of our propaganda campaign. DOE is simply selling the public on this. And, we made a little bit of effort to turn it around. But, I understand the program is now back and operating to a limited extent.

Question: It’s growing. They just put a station in at Ely.

Gary: Yes, change of the guard. One of the items I tried to sell them on, my state and the rest was, if Yucca Mountain goes, spent fuel is shipped across the country, the state ought to have some resources on its own that are accountable to state government that are able to monitor activities as it moves through. I said, maybe we could take some of these stations and put them
along I-70 or whatever highway routes. Furthermore, what I had proposed to do and the state didn’t fund it, I was going to take our station and mount it on a skid and we could put it in a pickup truck.

It would be available to the state to take out at where they thought there was an incident or, if some residents claimed that, we see all these trucks going by and we’re concerned, it’s a little community here. We could locate the station there for a short period of time. And, it would not be beholden to the federal government. It would be the state’s property and we’d run it. Well, the state thought about it. Then, our governor, Michael Leavitt and others, declined.

To give credit to Bruce, the program was so successful, that other sites like Hanford and Rocky Flats and others picked up on it. They said we have such bad public relations, what works out there? And, they said this community radiation monitoring program at the Nevada Test Site is doing good. There was an effort and I actually went to both Rocky Flats and Hanford, to promote it. These programs were fashioned after what Bruce had originally conceived and we got going. I think the one around Rocky Flats is still operational.

Question: Did you leave the program before a lot of the stewardship changes happened?

Gary: I left probably about the same time that Bruce did. It kind of wound down. The training stopped. Bruce had left, the training stopped, there wasn’t funding for that. I think what they were going to do then is they wanted it a little bit closer, so they picked on Jack Heppler. Jack was a good manager, he taught at the small college down there, at Utah State College. And, they said, we’ll just have one each year. We’ll just bring in a few station managers, those around Nevada. Jack invited me to the training and I gave a couple of talks.
After that, without Bruce and our close interaction, the program dwindled. The new DOE officers wanted to go a different way, which was fine.

Question: Do you have anything else you would like to add about the program?

Gary: Bruce got the money and, he convinced the people at DOE and supported the program. There were challenges along the way. Early on, Bruce would tell me, “You know, I’ve got people in my organization that say this is foolish. You don’t go out and try and do this because these station managers may sabotage you.” I said, “well, I know what you mean, Bruce, but I think we have to just try it anyway and see.”

I think it was a good program. I think it was money well spent. It helped educate the public. It provided some essential capability out there. The program helped change the attitudes on the part of the AEC and then the DOE as to how to deal with the public in radiation matters. Bruce felt that way. I supported and agreed with him. It was wrong to simply have an official come in and tell people that all is well and then leave.

What you needed to do was build resources within the community that could monitor and do measurements on their own. That is what Bruce accomplished. And, I think, it still prevails to some extent, at least DOE remembers it. I hope some folks are around that still do. That’s important if and when Yucca Mountain comes on line and spent fuel starts moving through the country. I doubt that we will go back to nuclear testing. That would require a significant hurdle but, the big issue now is the Yucca Mountain project.
Marg Herndon on the first Test Site trip: We took them out between Christmas and New Years the winter of ’81 for the first trip to the Test Site. We stayed out there overnight and had the nice meal at the steakhouse and they got to see what was going on at the Test Site. Of course, that’s when we were doing testing, so there was a lot of activity out there, a lot of stuff for them to see.
First Winter Tour of the Nevada Test Site - 1981

1. Floyd Ricketts
2. Jim Lindow
3. Sue Lindow
4. Herb Maunu
5. Jack Coogan
6. Marva Sullivan
7. Dell Sullivan
8. Lolla Ricketts
9. Eve Papez
10. Louis Papez
11. Marg Herndon
12. Lois Hunt
13. Hiram Hunt
14. Nate Cooper
15. Tom Humphrey
16. Gary Sandquist
17. Dee Jenkins
18. Bob Nelson
19. Connie Baldwin
20. Mel Baldwin
21. Bruce Church
22. Lisa Lehmann
23. Jerry Smith
24. Bernice Johnson
25. Pat Woods
26. Larry Woods
27. Myron Johnson
28. Gennie Lisle
29. John Lisle
30. Carol Thompson
31. Sunny Wiard
32. Geneva Douglas
Community Monitoring Program Tour of the Nevada Test Site  August 5, 1986

1. Chuck Costa
2. Howard Shelby
   (LTR Driver)
3. Captain Dave Crawford USAF
4. John Lisle
5. Bill Wiggins
6. Gary Sandquist
7. Jack Heppler
8. Nate Cooper
9. Larry Woods
10. Scott Tyler
11. Gennie Lisle
12. Marjory Jones
13. Marti Heppler
14. Floyd Ricketts
15. Rick Hardy
16. Hiram Hunt
17. Lois Hunt
18. Myron Johnson
19. Mel Baldwin
20. Dell Sullivan

21. Daryl Thome
22. Gary Pierson
23. Lonnie Pippin
24. Herb Maunu
25. Al Gianotti
26. Jim Hopkin
27. Lael Hopkin
28. Lorna Hardy
29. Christy Castleton
30. Val Smith
31. Elva Smith
32. Bernice Johnson
33. Connie Baldwin
34. Marva Sullivan
35. Janette Pierson
2001 20 - Year Anniversary - Training Session in Brian Head, Utah

1. Leon Gay  
2. Ted Hartwell  
3. Marg Herndon  
4. Rick Harding  
5. Brian Brown  
6. Gerald Hein  
7. Jon Skulstad  
8. Rusty Taylor  
9. Scott Mortensen  
10. Curt Walker  
11. Barbara Kennedy  
12. Kaye Allisen-Medlin  
13. Victoria Johnson  
14. Ken Garey  
15. Rita Gillum  
16. Beverly DeWyze  
17. Brad Benson  
18. Ted Savageau  
19. Tom Judd  
20. Don Curry  
21. Dell Sullivan  
22. Mark Howard  
23. Nicklas Bowler  
24. Scott Campbell  
25. Lynn Karr  
26. Rick Johnson
Lynn Karr and Greg McCurdy discuss the portable station with two Station Managers.

Ken Garcey and Michael DeLee talk upgrades with Scott Campbell.

Craig Shadel discusses instrumentation with Michael Herndon of Henderson and Dale Jensen of Milford.

Photos courtesy of Bruce Hurley
Chapter Six

Community Environmental Monitors (CEMs) and their Communities

Community Radiation Monitoring Program Station Managers – 1983

1. Vern Andrews
2. Jim Hopkin
3. Sue Lindow
4. Elva Smith
5. Marva Sullivan
6. Mitch Kunich (DOE)
7. Bernice Johnson
8. Al Smith (EPA)
9. Hiram Hunt
10. Frank Markwell
11. Jim Lindow
12. Val Smith
13. Dell Sullivan
14. Jack Heppler
15. Bruce Church (DOE)
16. Myron Johnson
17. Gary Sandquist (University of Utah)
18. John Lisle
19. Jack Coogan (EPA)
20. Floyd Ricketts
21. Bill Moore (DOE)
22. Nate Cooper (DRI)
Stations

The CEMP stations stand in big cities like Las Vegas, smaller communities dotted throughout rural Nevada and Utah, and on ranches. Several of the Nevada ranches have existed since the mid-nineteenth century and ranchers and more urban areas have experienced both above-ground and underground testing. Personal relationships with ranchers in rural Nevada are especially important. Isolation, economic challenges, and consistent negative interaction with government agencies have encouraged a distrust of government representatives. Each community or ranch has a personality and unique characteristics. As a group, the Station Managers could not have more diverse economic, political, social or religious backgrounds. They are united, however, in two things: a love for and desire to protect their families, and a deep concern for the welfare of their communities. In the following interviews, the local Station Managers reflect on their community characters, their personal views on the testing and monitoring, and the effects the program has had on their lives, their families, and the lives of their neighbors.
Dell Sullivan – Station Manager since 1981

Question: I know you’ve been in the program from the beginning, 1981?

Dell: Actually, we’ve been in it as long as anybody except Nate Cooper and Bruce Church.

Question: When did you first become aware of the CEMP program?

Dell: In ’81. I remember back 23 years ago I was out in a little Laundromat we had and a guy walked in and said, “Are you Mr. Sullivan?” Nate Cooper. So I was one of the first that they picked up, and so it went from there.

Question: He described the program to you and asked if you wanted to participate?

Dell: Yes, he explained it, how he got into it, and they were trying to get high school science teachers. Of course I was a high school science teacher, so that’s why they come looking for me.
Question: You’re very unusual in that you have the station on your property. No one else has that. How did that come to pass?

Dell: Well, at that time we were up at the old high school? They were worried at the time about vandalism, and that would’ve put it quite a piece on out of town, the school was. This was going to be temporary until the high school was done. It is. It’s only 23 years now. It’s worked out. I would guess that this is probably one of the best watchdogs you’ve got in that program.

Question: And, for maintenance purposes, you can step out your back door and maintain the station.

Dell: Oh yes. I would say about every day I just walk by it, just out of habit. I enjoy it.

Question: Were you aware of monitoring before Nate showed up?

Dell: Well, surprising enough, her (his wife, Marva) dad, they lived right up here. He was an old-time resident. So I came out here, was going to teach school one year and then go on to a bigger school, and then I married her, and she wanted to leave but I didn’t. But her dad tested, some eight or ten years, right?

Marva Sullivan (Dell’s wife): At least.
Dell: He had a little air machine up on his lot. So when he died, I took it and we had it for about two years before this started. So, the history goes back on the monitoring even before that, yes.

Question: What was it that made you want to be involved in the program?

Dell: I was a science teacher and of course my wife had lived right here and I was from St. George. We were in this downwinder area. Of course, I’d heard all the rumors about how it was killing everything from here to Moscow, cancer, so it was of interest to me. But of course I never did believe all those rumors that radiation was going to destroy everything. But my interest was in that. I wanted to find out.

Question: What do you think the program brings to your community? Have you had much feedback from people in the community about the station?

Dell: At first we got a lot of questions, didn’t we, from people. By going to these institutes every, summer, plus they had one at Christmas, they used to, five or six years ago, so they had a lot of questions. There was concerns. This radiation, some of them claimed that there were hot spots in the place because somebody lived in this town and they got cancer in that house, and, when you got right into it you’d find out that, a lot of those that quite often had cancer, they didn’t even live here for the time of all this testing. They came from New York or whatever. I was quite intrigued with that. But everything was trying to blame testing and it kind of relieved the concerns of people to have somebody that lived in the community that they knew and could say hey, we’ve got all the facts that they give us. And now we get questions once in a while but I
think the biggest use we get out of this is the weather station. Soon as this little storm goes over, I’ll get a couple of calls, “How much rain did we get?”

Question: You were a science teacher? Did you ever use the program in your classes when you were teaching?

Dell: Oh hey, you bet. I had those kids quite often trying to check it and keep records on a few things, and then this thing about Yucca Mountain. That was a big concern at one time. We’d have some people in this valley, luckily the worst have moved out. She wanted to put signs, “Waste no, not in our community.” So, I did a little bit, and it was easy to do. It helped me because, there’d be some instances, why, you could just work maybe a weeks time. One time they sent, forgot his name. But he come up and he taught on radiation for almost a week. So, yes, I liked it.

Question: Do you think because you were a science teacher, your profession affected how you saw the monitoring?

Dell: Oh definitely. You bet. You’d be surprised how many ideas you’d get about this monitoring from folks who don’t know much about it. Hey, you get an old cowboy, a lot of them didn’t even finish high school, are intelligent people, but they go by what they hear in the paper, and you don’t always hear the truth in the papers.

Question: Did you ever have any public meetings here?
Dell: At the start we did, didn’t we, honey? We did have some and it was under Nate Cooper usually that set that up. He was up on the mountain that one year for the anniversary. But anyway, old Nate, we never ran into him. We were old country people, and they set one of these up, these meetings. She made a whole bunch of cinnamon rolls for them and old Nate never got over that. Somebody’s down for a meeting and somebody’s making cinnamon rolls.

Question: I think cookies were the standard fare at those meetings.

Marva: He really liked those rolls and they went over big.

Dell: Well, Nate was a good one to have there.

Marva: We had a lot of people there the first time. Then it dropped off.

Dell: Yes, there was. I think that you get the same ones every time. But the town meetings were all right but I don’t really see much need of them right now too much. Most of them in a place like this. Now in Vegas or in bigger places, I don’t know, but if they have a question I think they just come and ask us. We have an A-bomb testing, town meeting flyer in there. When everybody goes in there, they all ask about it.

Question: Why do you think this community was chosen for monitoring?
Dell: Only about sixty miles if you go straight, to the Test Site. It was one that should have been. I don’t know. The cancer was involved and everything. This town is like any place else, they have cancer. But they don’t realize it, probably, percentage-wise, not any more than up in Salt Lake and some other areas. But when that hits a family, testing’s the first thing that they think of.

Marva: The first thing they think of. That really bothered me.

Dell: Yes, back then when they did a test and the wind changed, they’d bring those buses into there. They’d take anybody out. They had some buses here.

Question: But were you guys ready to leave on that too?

Marva: No, because my dad just said we’ll just stay inside, and close the windows. Because we had the air sampler for a long time, from the beginning of the aboveground testing my cousin worked out there and suggested they put it there. See, she got brain cancer here. What’s that, seven years? Oh no, no, it’s been about ten years. So, she would know exactly how people felt that didn’t know. Her attitude is still supportive of the testing.

Dell: We’ve got some evidence to go by, all these institutes and things we went to and whatever. But you can see it still and know how the others felt.

Question: So, the station has always been in your yard.
Dell: It’s always been there.

Question: Was any other kind of testing done that you’re aware of?

Dell: Oh, you mean testing water? Oh yes, you betcha. In fact, I think testing was taken almost monthly. Those guys would come by, Ross Hope. He would come up almost monthly to get water samples.

So yes, they’ve been, very concerned about the water here. Over the years, I’ve never heard where they found any radiation or anything. In fact, because I believe that underground testing, all that water can go in the other direction. At first they thought that maybe we were just guinea pigs here and they just didn’t care, but through this program, I’ve found that’s not true. They might have done some things that they shouldn’t have done but it wasn’t because we was guinea pigs. They just didn’t understand it then. We learn as we do things.

And they were the same way. That’s the biggest thing that we had to contend with, was this attitude that we are guinea pigs, and this program has helped because we live here too. We say we learn but that’s not necessarily true, people will believe anything. So the program, I think, is well worth the effort that’s gone into it.

Question: Were you involved in the body count program?

Marva: Yes, and our kids were too.

Question: What kind of an experience was that for you?
Dell: It was quite an experience for our kids because they’d give them fifty dollars each.

Marva: So, they thought it was worth it.

Dell: And, it was warmer too. It was quite an experience for them. They had a lot of questions about it. They’d ask us and we’d tell them, “Ask them.” The kids, they’re really not as concerned about radiation. But they knew there was something going on.

Marva: They thought it was a fascinating experience.

Question: How involved did the community get in the monitoring?

Dell: Well, mostly just, if they had a question. We used to wear one of those badges all the time and there was a lot of people that did at that time. Haven’t done that in quite a while.

Question: When the accident at Chernobyl happened, were you able to see anything on your station?

Dell: About ten days or two weeks later, we picked it up here and we thought we had something.

Question: Were people kind of interested in that?

Dell: Oh yes, it was interesting.
Marva: They would call with questions.

Dell: Well, they let us know, those guys’d come around and they would to take care of it. It was EPA for a while and DRI. I assumed that it’s all DRI now. But, as with all people, they hear things, read things in the paper, and they’d ask but, as far as the badges, we wore them and there was a few others. Of course, I think all of them were from the Test Site, they wore badges. There was a lot of involvement. Hey, this thing was built around that Test Site with a lot of the jobs.

Question: Did anyone ever ask that the station be removed?

Dell: Oh no, never did. Most people think it’d be more good than harm.

Dell: All we had was one set of demonstrations and I missed it. I was gone, but some of those hippies have been out there. They stop by and protest. I think this was due to Chernobyl. Some days we weren’t in. If there was anybody in the world that knew what was going on, those hippies did.

Marva: Least they thought so.

Dell: We had a cherry tree there. It was interfering with the solar power. So that’s the only thing, we had to cut our cherry tree down.

Marva: That’s true, I’d forgotten that.
Question: Do you think having the monitor be someone from the community improves the effectiveness of the program?

Dell: They’ll believe them over the others. Yes, they have more credibility.

Question: Did you ever have a time before the station was up that people from the government came out here and talked to people about the testing?

Dell: Yes. Till her dad who had that little monitoring deal, why, they’d come quite often because they would tell you things. If there was any question, they’d have a meeting, talk with you, whatever. I know they’d usually show up for the sheriff. Why, if he seen any of them, he’d shake his head and say, “Guinea pigs. They’re going to kill us all.” I think that when they set this up using local people, they did the right thing. I think they got that right. Three Mile Island, they built a network, and so Bruce got the idea that that’ll work here. That was a good step.

Question: How have changes in the stewardship of the program affected you?

Dell: Well, you get to know somebody, and know what to ask and how to ask him. They made some changes. Oh, that little redheaded gal that was there, a few of them, they got all hep. The idea among the founders was, they brought them in, they got to do something. They were starting a lot of change in monitors. “Somebody retiring from teaching school and we ought to get rid of him because he’s no longer a science teacher.” Well, that’s good but, some of your
best and most intelligent could do the program better and they were going to change them. I thought it was stupid. That was basically the only thing we had that was a problem.

Marva: They needed to keep the experienced monitors.

Dell: Well, I know they were going to change us, to drop us. It wasn’t going to bother me that much, since I had a general interest, but the money we make isn’t as much. We got an interest in the program and we think we’re doing some good here. I have a buddy down there, I got word that he said, “Hey, we’re going to make that change, so what we’ll do is why don’t we put you on as alternate?” Hardy was a hot science teacher then, he was younger, so I said, “Hey, that’ll be fine,” so they did that so they kept me. Well, they got to looking around and said, “Hey, if you got them all there, you got the station managers, they’re supposed to change the same,” so they changed the money so that they’d all be the same.

Living right here, I’ve been the monitor the whole time. Rick, he’s, in other things, yet he kept it up at the school. He had a real interest in it that way, so it’s worked out OK. But, they got a little resentment there. I know one of the guys up at Ely, he changed from a real friend to an enemy, where he said, “Hey, I’ve been doing this,” he wasn’t telling the exact truth, too, because he was saying that they’re not telling the whole truth. That was a result of, they should have done a little more leg work. He wasn’t right, going out against the program. I mean if I’d’a been laid off, I surely wouldn’t have gone out against the program. But, I think, hey, I’m 72. I know just as much about that as a bright young fella in high school. I got a lot more brains. That is something they ought to watch. They made a few of them emeritus and it didn’t bother them because they did some footwork first.
Marva: Then the Brian Head thing lets us get together

Question: What did you think about the training that you had received over the years?

Dell: Oh, it’s excellent.

Question: Has it changed a lot?

Dell: It’s excellent training. It changed over the way it was but at first they went through and they taught us radiation. So most of them are trained, so they tried to change it out, put it into the Yucca Mountain, and I think that’s all in there. There’s some good connections being made there. I’m looking forward to the training this year. The last letter that I got from Ted, it said we’re going to take one day and go to the Test Site, so I thought, “Hey, have to be in Vegas then.” We went to the Test Site three or four times and that was interesting.

Marva: We had so many people that wanted to go out and tour around, so we sat down with the fella and he said, “Well, I don’t see why we can’t,” so they did tours several times and people loved that. Then a lot of them were older and had lived here a long time think that’s why they were so interested. And it really was for the positive. It truly was.

Dell: Well, I’ve been to Yucca Mountain a couple of times but that is quite an experience. I guess they never sold that digger yet, have they?
Question: Oh, I don’t know. Is there anything else about the program that you’d like to add?

Dell: I think it’s a program that was needed. As soon as they told us they stopped the testing I was wondering about it, that at one point they was going to do away with it. It got in the papers and then the papers really, “the fox is going to be guarding the henhouse” and so on, so they was really out there too. I thought there really isn’t that much reason. But after I read all this hullabaloo in the paper and the fight in Nevada and how they’re not getting along and they don’t care anymore I thought they’d be silly to drop it even though it wasn’t doing that much good. Public relations-wise it’s pretty cheap public relations really. But I thought for a long time they were going to do away with the program. I don’t think they’ll ever do away with it now. I personally don’t think nuclear age is over by any means. They say, “Well, peaceful.” I don’t think it’s over at all. I’ll say one thing they’ve always treated us well. Even our children, they think it’s the best thing ever.

Marva: Oh, it was just so good, from day one with our children and that made it all the difference in the world. They were really doing an excellent job. The way I felt, I never resented having to go or anything and we just always appreciated the program. We have learned so much from it and I feel Dell has given his all to it and he’s never resented it, he’s enjoyed it. I think that’s one reason probably that they like teachers to do it. It’s always been a positive thing.
Amargosa Valley, NV

Station Established: 1982 (EPA/YMP)
Current Status: Active

Current Managers: Kenneth G. Garey
Michael DeLee

Ken Garey – Station Manager since 1982

Question: When did you first become aware of the CEMP program?

Ken: I saw it advertised, announced by, Chuck Costa in, I think, 1982? By that time it had already been formed. Bruce started this and, Chuck picked it up and did the legwork, and Bruce approved it, of course. I believe it was 1982. I thought it was a neat concept. I read it in the paper, and they announced what area they were going to put these stations in, and then ours was not one of them. So I wrote, just wrote a letter and said that we should be included. I was on the town advisory board.

I got a nice letter back, said that where they put the stations was for the downwinders but it was where there were the most controversies and “there’s no controversy in your community and, but if we expand this, and we intend to, we’ll certainly consider the Amargosa Valley,” Lathrop Wells at that time, for one of the stations. Lathrop Wells is the intersection of US95 and SR373. The post office was there and there were two bars and a filling station and that was the community then. The area where I live was called the Amargosa farm area. There were a few farms down in here, none of them very big, and a few Test Site workers, maybe a dozen of us that, worked at NRDS, because it’s only 30 minutes away from there. I chose this area because I didn’t like the bus ride from the Las Vegas area. Then, the owner of the brothel was murdered. I don’t know if you’ve ever read The Nye County Brothel Wars, the book?
Question: I haven’t read the book, no.

Ken: Some of the citizens said, “Oh, we’ve got a bad name,” and said, “Whenever we go to cash a check, we show our identification and it says Lathrop Wells and they all snicker,” and so they changed it to Amargosa Valley. Everybody just cast around for a name. And I said, “Do you know what Amargosa means in Spanish?” They said, “Well, it’s a beautiful Spanish word, Amargosa.” I said, “Amargosa means brackish water.” I said, “People’ll really snicker, especially the Mexicans.” You can’t win. But it’s black water, it’s bad water, your cattle won’t even drink it. They stay away from it.” Oh, no, they persisted and they renamed it Amargosa Valley, and they went through the procedure to get the post office name changed, moved the post office. Even contacted the highway department to get the name changed, the signs changed. They got state permission. Then Rand McNally, you have to notify all the mapmakers. It’s pretty well decided that it’s now Amargosa Valley, except the people that live at the intersection still call it Lathrop Wells.

It really isn’t a good name. The true name of the place in history is Lathrop’s Well. Lathrop was a cattle owner in the Ash Meadows area. He grazed cattle up in the Jackass Flats area, Area 25, I guess. But there wasn’t any water, so he would bring a tank of water, would pull it with two horses, and then there were some tanks, some cement tanks, that were left when they built the railroad through there. About every 20 miles, they’d build a camp so they had these stock tanks. So he used one of the stock tanks for his water, the cattle would come down to it, and they called it Lathrop’s Well. It was kind of a joke. Later on they put in a windmill and pumped water. It wasn’t very good water, but that’s where the rest stop is now, where the windmill used to be. The tanks are still over on the other side of the street. That was the first
location of the monitoring station, because it was right on the highway and the EPA could check it. They didn’t have a full station, and then they moved it down here in the center of the community, when they hired me. I think it was in ’88.

Question: Was it just the PIC, the Pressurized Ion Chamber?

Ken: Had the PIC, TLD, and an air sampler.

Question: Daryl Thomé told me to ask you about the Lathrop Wells station, PIC and brothel? He said it had something to do with truckloads of low level waste giving a reading to the station.

Ken: Absolutely, yes.

Question: When the low-level waste shippers would stop near the brothel, there’d be a spike at the Lathrop Wells station for however long they parked next to the PIC. So they’d know exactly how long the guys were parked at the brothel, because they’d have a spike at the Lathrop Wells station. Do you know this story?

Ken: I was part of it.

Question: All right, come clean.
Ken: It was low-level waste going to Beatty. Beatty started receiving waste at 0700. In the state of Nevada there are no free zones. The drivers were not allowed to stop or park their truck in Nevada. So, they always got their sleep at Kingman. There’s a free zone there and they liked to cross the dam in the middle of the night because there’s less traffic and these trucks have full capacity loads, so they’re very careful and avoid traffic and get here about five. Then they would sleep in the truck until seven and go on up to Beatty and get unloaded. Then one of the principal shippers determined that while traveling that far, their loads would settle and move and the vibration would shake the lids loose and screws would fall out of the lids if they were shifted enough. Each of those was a violation, and the state inspector would write them up. If it was serious enough, if the load shifted in the truck or anything like that, the shipper would get a citation. Then they would be subject to fines in the state of Nevada and, usually have to send somebody from Oak Ridge to Carson City where they’d plead insanity, “It’ll never happen again, we promise you.” Then they’d get their permit back. They’ve got waste coming into their plant and they’ve got to get rid of it. They were spending most of their time out here explaining what happened and it was serious enough that they could’ve lost their license. They were in jeopardy. Some truck loads were returned to the shipper if the violation was serious enough.

So, they sent a technician out to inspect the loads, but it was very expensive. They had to pay per diem and everything. So they hired me. They said, “Can you keep us out of trouble?” I said, “If you make good shipments, you don’t have any trouble. But yes, I’ll tell you when your shipment will pass, I can do that.” I would meet the trucks at five in the morning and, look at the manifest, be sure everything was correct on the manifest that the driver carries in the cab, and I’d check the load to see if it had shifted and make sure that the bar codes matched the manifest. That was one of the big things. A lot of times they loaded at night and they’d find a container
that was too hot or else a whole collection was. If it was over the limit, they’d take something off and put something else in but forget to change the manifest, because they couldn’t do that at night. I said, “You guys got to quit doing that.” The shipper hired somebody at night to type manifests, but by then the truck would be en route and then they’d send a fax to change a manifest. Well, now, that doesn’t go over because that truck is already across the country, so I’d check that form carefully. I had a Geiger counter to check the exterior of the truck to make sure there weren’t any hot spots, and reseal the truck and send it to Beatty.

Well, the restaurant wouldn’t make haste to get coffee and these guys were grouchy. I mean, these guys, oh, they were mad, so I got the restaurant to put a cook on and start serving breakfast at five, and that gave me a little more time to inspect. If they were shipping three to five trucks, it’d take me about 20 minutes a truck. So, they’d all try to park as close to the restaurant as they could, and I said, “Stay away from that instrument over there. Don’t ever park on that side. You park over here. This is your turnaround. Everybody knows that you’re over here, and there won’t be any problems.” Well, new drivers’d come and they’d say, “Well, I’ll get over here and I won’t be in line, I’ll be the first one out because it’s closer to Beatty.” I’d get up there and find him asleep, parked right next to the PIC. I’d say, “Hey, that’s a PIC.” I said, “You’re not supposed to park there.” “Well, I didn’t know anything about that.” I said, “Well, you know it now, so just move over here with the rest of them.” I depended on them to tell me which one got there first, because I’d take them in order. The state inspector received a print-out from the port of entry for each truck.

They were always trying to jockey positions, so I’d look at the tire tracks. I said, “Look, you didn’t get here first. Your tire tracks are on top of his.” So, they finally quit playing games. Well, then the owner of the, restaurant had to put this cook on for breakfast, and so he started
charging a dollar for a cup of coffee. Well, these drivers just went berserk. They said, “We get free coffee anywhere we stop.” I said, “Yes, but you buy fuel and you take a shower and change tires,” and I said, “These people are just trying to make a living.” They said, “Anybody that charges a dollar for a cup of coffee…. We’ll pay a quarter.” I said, “I don’t set this.” And it’s cold outside, I mean, it’s bitter cold.

And they’d get in fights. The driver’d fight the old man and it was just a mess. I said, “Look, this has got to stop.” I went into the bar and restaurant, I said, “These drivers get free coffee. Each one of them’ll get one of my business cards, and I’ll come in every Friday and pay you whatever you want for your coffee, I don’t care what you charge me but I want these drivers to have free coffee. So, put the card in your till, I’ll pick them up every Friday night and pay you.” The guys said, “Where’s that card, that I get free coffee?” I said, “Right here. Go right in.” But then they’d order, bacon and eggs and ham, and leave a two dollar tip. The waitresses were happy as could be and they’d give them free coffee, and I think it probably only cost me about $20.00 altogether for the whole period of time I did that, a couple years. Everybody’s happy. I finally got them used to parking on the east side. They had to sleep in their trucks and they couldn’t go get a motel room. Whether they went to the brothel, I don’t know. I didn’t care.

Question: So the brothel and the PIC were on the same side?

Ken: Yes. The restaurant and bar were in the center. The PIC was on the west. I found that most of those drivers were real good people. I mean, they work hard. A lot of them were intensely religious, from North Carolina and Tennessee, and they were good citizens. They were
a cut above the truck driver that you think of. They wore uniforms and had security clearances and training. That was one of the things on my check-off list, was the driver in uniform? And of course they almost always were.

Well, one day they sent a new driver and, when you open the back of the trucks, they can hear you, walking around in the truck, so I’d always tap on the door and say, “This is Ken Garey. I’ll be at the back of your truck.” Well, this guy, he was a new driver at the time. I’d get a truck manifest ahead of time. He jumped out of the truck in his polka dot shorts and he said, “I’m supposed to help you.” I said, “Driver, you’re out of uniform.” “Oh, I’ll be right with you.” So when I released the truck I called and said, “Hey, I found one of your drivers out of uniform. He had red polka dot shorts on and he jumped out there in about 10 degrees and he almost froze to death.” The dispatcher said, “That could only be so-and so.” But they were good guys, very conscientious, very, very careful. I still get Christmas cards from a lot of them. So, that’s the story of the PIC. Just once in a while, I’d find them parked there, next to the PIC and brothel. And, it was usually a new driver. But the ones in the know stayed away from the PIC.

Question: Were you involved when the station was moved over here.

Ken: Yes, I helped install it here, just volunteered. You know, you always need something. They were going to drive stakes in the ground. I said, “Let’s pour concrete piers.” I got concrete and the mixer from work. I said, “We want this to be a first class station.” EPA changed the station at Lathrop Wells, and maintained that as a check and balance against this one. I was the only manager; it was a solo job then.
Question: When did they take the second one out?

Ken: As soon as the Department of Energy quit paying for it. It was the EPA’s contract. They decided they didn’t need duplicate checks. Station 171 also had a cryo trap gas sampler at that time.

Question: When the program started, the goal was to find science teachers who would be the station managers. What is your background?

Ken: I’m an engineer in the nuclear field, and since our school is only a K-8 school, the science teachers just weren’t interested in it. They interviewed a lot of people and Daryl Thomé recommended me from working with him at the Test Site. I guess I was dependable and truthful and could do the job, so I got it.

Question: So your background’s a little bit different than what they had in some of the other communities, but you’ve been here a very long time?

Ken: Yes. Since ’62.

Question: And approximately how many people were in Amargosa when the station was up here, do you have any idea?

Ken: I would guess 800.
Question: So you were very well known in the community?

Ken: Yes.

Question: What made you want to be involved with the program when you saw it in the newspaper?

Ken: Well, I thought it was an excellent idea to get the participation and the knowledge out to the people. As I said, I was on the town advisory board at that time and there was a lot of concern about the results of the testing and unfortunately, news accounts of down-winders. We’d almost quit testing by that time but the EPA had made a lot of inroads out here. They knew where people were living, how many were in the family, how many had milk cows, milk goats, and where they generally were at any one time, if they had to evacuate. They were well received and the feeling was good. Then they picked certain locations to hang TLDs. People volunteered to wear them, and they put them in the stores if the owner wanted to, or they’d hang them in the bar. They didn’t have any problem with it at all. Then this monitoring station for the community came along and I thought it was a good idea to get the message across to alleviate some fear.

We had many people that worked at the Test Site, both in the weapons testing, and administration that there really wasn’t any problem. They were very knowledgeable with what was going on, and the care that the Department of Energy was using in their testing and they were working right on the tests. So this was a good idea, to prove to those who were not familiar with the Test Site. But then we were getting these stories, mostly from the *Las Vegas Sun*, that
people had hair falling out of their cattle, and people I knew in the EPA said, “Yes, their hair fell out, but they had lice.” And they always had lice that time of year; it was in the spring. The EPA spent a lot of time there.

Question: Were there any public meetings back then?

Ken: Yes, matter of fact, there were and they’d come out, Bama McKnight would come out and give his presentation on atomic energy to the kids at the grade levels, and then in the evening for the public. I invited Ken Giles out several times to give his presentation mostly to the sportsmen who were interested in deer hunting. I said, “This guy has got some pictures you won’t believe of deer on the Test Site,” and then Ken would show his slides and then just carefully work into how this had no effect on the animals. He took samples of their knee joints, and their thyroids and harvested two to four deer a year. They monitored them and ran them through the labs, all the vital organs. These are the animals that graze right in there, and then he’d just very carefully slide in the fact that the animals in the wild would show no effects on them. Back then they had a real presentation, well attended, and they’d see the deer pictures.

Question: You wrote that your family has been here for four generations?

Ken: Yes, my father lived here and of course my wife and I both worked at the Test Site and we adopted three boys and they married and had children. Even our grandchildren, as soon as they were able to sit still for 20 minutes, about a year-and-a-half or two years old, would have a whole body count. EPA would read to them through the whole body count. They were born here and
their parents were born away from here, so they were a long way from any effects from the radiation. They made a good comparison. And my dad was born and raised in the Midwest, in Iowa and Nebraska.

Question: Was he here for any of the above ground testing?

Ken: No, none of the above ground testing. He was here for the below ground, because they quit testing above ground in ’58.

Question: ’58 to ’62 was the moratorium, and then ’62 to ’92 for the underground tests.

Ken: Yes. I was at the Trinity site in New Mexico for the post shot characterization in ‘53. I went through the Army CBR School in ’52, that’s Chemical, Biological, Radiological, Warfare School, as much as they knew about it. We surveyed the Trinity Site, made a grid, and then we’d lock points at this grid and take a soil sample and a penetration check and, bring the soil sample back. We’d start from Ground Zero and then we’d just follow the grid lines. I actually stayed at the old McDonald Ranch, which was part of the original place where the scientists stayed when they were putting the bomb together. It was interesting because it was a part of history. I didn’t realize it at the time. We picked that site because Trinity was too far to get to easily and it took a long time to get out there. We wanted more time in the field, so those that wanted to stayed there at the old ranch houses.

Question: How did you come from New Mexico to Nevada?
Ken: I was in the service in New Mexico and, when I got out of the service I wanted a nice warm place to spend the winter, so I went back to college and, worked construction jobs in the summer and went to college on the GI Bill and got my engineering degree. I was a journeyman electrician before I went in the service. So I was an instructor most of the time I was in the service.

Question: How do you think the monitoring has been viewed by the community here in Amargosa Valley?

Ken: When it first started, there were a lot of questions, a lot of interest, and now, I’ll bet I haven’t had a question this year. Visitors to the clinic would see me out there changing the station. They’d come over and want to know what the weather’s going to be, and I said, “Well, you can just tell that now,” and, show them what we have and give them a brochure and they are usually only interested in weather. Or as some people stop at the library, wait for somebody to run in and out, and so I’d see they didn’t want to take much time so I’d hurry up my presentation. There used to be a lot of questions. The town advisory board formed a nuclear steering committee and I was its chairman. A lot of people signed up to be on the committee, and then they found out I would assign them to give a presentation, you know, at random, at each meeting, and they didn’t like that too well. I said, “It doesn’t require a lot of preparation. You can bring in a newspaper article or anything that’s interesting,” I said, “nothing censored or anything.” Usually if they were assigned they wouldn’t show up, so I’d have something to give. But, we had a presentation every month. They’ve got a lot of business to do at those town
advisory meetings, so I’d try to limit it to a less-than-five-minute presentation, but I always had handouts.

I got either EPA or DRI handouts, and then I always gave the minutes of my presentation to the secretary so they could keep them on file. But that had a lot of controversy from protestors, and I decided it was time to just kind of back off and let things simmer down. I don’t think they have a steering committee now.

Question: Why was it controversial?

Ken: Oh, it’s when a Las Vegas firm, Fluid Tech, made a proposal. They had a state permit and they were going to decontaminate the vehicles and equipment at the Test Site and stage them out here for resale. I was a consultant to Fluid Tech at the time and they thought I was bringing this undesirable enterprise into their community, in their pristine community, and there’d be trucks running up and down the roads leaking contamination. I said, “Look, everything that comes off the Test Site’s cleared for road transportation.” I see a different group from Texas is building a big lot down here on the highway to do the same thing. They’re planning to bring the drill rigs and I really question how they decontaminate the drill rigs, but that’s all right. Nobody’s so worried about that. Of course, the chairman of the town advisory board is leasing the grounds. Town politics definitely had a part in their decisions.

I imagine it’s going to blow over. There’s a group of people out here that is against anything. They come here for peace and quiet and that’s what they want. Then they wonder why they move here and then the first thing they want is a paved road to their place and all. Well, there is a small tax base. They moved here because they wanted to get out of the high tax
business in Pahrump and Las Vegas and, they want 24-hour police coverage and full-time fire department and paved roads. That’s what they were used to and they think that’s an entitlement in the community but they don’t want to pay the taxes.

Question: How did you think that having the monitor be someone community affects how the program is received?

Ken: Well, the EPA did a good job but they were outsiders. They were from Las Vegas. They were good people, they were honest and, knowledgeable but, Bruce Church’s idea of having somebody from the community, involved with this was perfect, and picking science teachers was a stroke of genius. The way it was set up, a lot of thought went into it. Like I say, it was a good idea.

Question: Did changes in the stewardship of the program affect you?

Ken: No. In fact, it probably got better. The only thing I resent about the EPA is that they dropped the community monitoring program where they bring people in for the whole body count. To me, that’s losing a whole block of background data. The case was that it doesn’t show anything. It wasn’t proving anything and it was expensive. I had regrets that we were losing a baseline. Other than that, the transition was slow and the people we worked with were just as cooperative. But I hate to lose data. Survey data, ground impact tests, anything. You lose it, it’s gone forever, and a lot of times you have to double back on it.

Unfortunately the people that participated were in the above ground testing here in this area when they did the above ground testing and did the underground testing and, and even the
nuclear rocket testing. Now I know that there’s no release but the public doesn’t know and how’re you going to prove it?

Question: Did you see anything on your station from Chernobyl?

Ken: Yes, the PIC recorded a slight increase from cloud cover some time after the event. At the time that Chernobyl happened, the manager, I worked for Westinghouse then, said, “We’ve got some people coming out here from Washington and they want to talk to us.” He said, “I don’t know what it’s about, so I’m asking each of you managers to come in and participate.” He said, “Feel free to answer any questions they have, as long as it isn’t classified.” So they brought some pictures and they asked, “What does this represent to you?” Everybody passed them around. It was some bulldozers out scratching the ground. And when it got to me, I said, “Well, they’re building a berm.” “What do you mean, a berm?” Well, I said, “That’s one of the emergency plans that we do in our program, one of the three rescue methods.” I said, “If a reactor falls off the railroad car on the side, the thing to do is bring in a bulldozer, pile up a berm of dirt, and work from behind the berm.” The guy said, “That’s the best answer we’ve had.” But they didn’t say what it was to be used for.

Question: Do you have any other stories about the program you’d like to share with me?

Ken: Oh, the program itself just runs so smooth there’s hardly any comments to make. We had a telephone, a fax, you get your answers right back, with people that I worked with, and other
people were very responsive and a crucial part of that operation and just really no problems at all.

Question: What did you think about the training you received?

Ken: I was in on the training in the early ’80s from Dr. Sandquist from the University of Utah, and I got a lot out of that. It was more to the college level. He’s a typical professor, started on time, had his introduction, the body, concluded, 55 minutes and you’re out the door and then another would start. The speakers that they brought in were well-known in the industry, and I got a lot out of that. A lot of that I’d like to review, because he’d always pick up where he left off last time and then he’d always give you a reading list of books that were out. I’d usually ask for them at the library and get a copy and it was collegiate level. I realize it was very expensive too. I have a feeling now that it’s at a lower level, but the presenters, that they bring in give a good presentation, but it just isn’t up to the standards that we had previous to that. But it’s good training. I realize that they feel the budget constraints and the logistical constraints and so on and I’m hoping that with the DRI location, we can get back to a classroom-type presentation.

A lot of people thought it was too difficult and too much study and too technical, “why do I have to do this?” and I get upset now when I see people read pocket books and not being attentive, they’re just there for the money and, really not interested in what’s going on. I feel that DRI has to pick up that interest again. I taught the apprenticeship program for electricians for six years and I was an instructor in the Army, and you get groups that have different attitudes, and they come in with a preconceived attitude, and if you try to turn it around, then you’re the bad guy. You’d lose their interest, so you have to develop a presentation according to the group
that you’ve got and then try to get them stimulated and pretty soon you have them on your side and then you go right ahead with your lesson plan. And you realize that all this is not “come in late” and “get here when I can” and “I’d better pay attention because there might be a quiz” and of course, they were tough. You had to pay attention, you had to take notes.

Question: What was it like working with Nate Cooper in those early days?

Ken: You had his undivided attention, whether you were having lunch with him or just talking to him. He just said it like it was and, you know, Bruce Church is the same way. He’s very rigid. For a long time, I said, “He doesn’t like me.” “He just plain doesn’t like me. I’m going to stay out of his way.” And then I found out that, well, if you’re doing a good job, don’t create problems, he’s happy to leave you alone. Chuck Costa too. For one of the underground tests, he invited me to the control room. I watched the test. I’ll never forget that. The weatherman calls the shots. It was all conducted as people with nameplates and phones sitting at their station and countdown starts, “Is everything all right?” and the test director pressed the button. That’s when it happens. And then comments were coming in from the participants as they were watching their monitors, instruments and listening.

Question: Talking about shots, you must’ve been here for the Baneberry venting?

Ken: Yes, but the shots were coming on a regular basis. One was just like another except the larger ones. We weren’t really aware of the weapons tests except that they would come and get our radiation monitor personnel. Then of course we had to monitor the radios and we had an
idea of what was going on. But no, Baneberry was a non-event. I don’t even remember looking outside.

Then the radio started crackling again and then they announced a possible vent and then they moved people around. Our monitors didn’t get back the next day like they usually do and so we more or less knew that there had been a release. But the tests I remember, of course, were Boxcar and the large-scale tests. I mean, we had to make preparations for our building and where to take cover. We even had to tie our locomotive down, which was a big job and then we had to move all of our cranes into the bay so that they would be out in the center of the stress. Ground motion put stress on the building, and it took maybe two days of everybody’s effort to get things ready for these big shots. Those are the only things I remember, and then we had to be there on the site outside the building during the event and we could feel the ground motion. But, no, Baneberry, other than the fact that we didn’t have any technicians, or any radiation monitors, for a long time after that, wasn’t big. Then afterwards I knew some of the health physicists and one of them was stationed at Warm Springs. He was kind of a laid-back guy, jovial character, and I still hear from him, and he saw this cloud come over and he said, “Everybody in the bar and rinse your mouths.” “Man,” he said, “I’m a little concerned.” But, then it passed over and levels returned to normal, and he knew that it was all right. But I guess that cloud went right over Warm Springs, in that general area, northward.

Question: Is there anything else you’d like to add about the program?

Ken: I’m very comfortable with the station and the management of it and the technicians that service it. They’re all good people and good to work with. At the very beginning I said,”You
know, the questions I get on this station are mostly are about weather,” and I said, “I think the best thing we can do is answer them with information about collecting data on weather.” Other than its initial purpose, radiation monitoring, it performs a service that is unique to our community.

Hopefully the program will continue. I know the Department of Energy, in the new order, thinks we should be set aside, scrapped probably. Well, no, I’ve been on these programs for years and it’s always true that, if you’re performing a function that’s necessary, you usually squeak through some way. It might be a little lean at times but I believe that baseline data is essential to new programs, like Yucca Mountain for instance.

Ken related this anecdote for Nate Coopers retirement June 9, 1994:

CMS 171 UNDER ATTACK

It was a cold blustery evening in October that I received an emergency message from the Nye County sheriff dispatcher that the Community Monitoring Station in Amargosa was being vandalized. This was unthinkable! Some of the best minds in the EPA and DRI had chosen the site and it had never had any problems. Its presence was assuring to the residents that the community was represented in the large picture of Nevada Test Site Monitoring. The thought of protestors also crossed my mind as I put on my Reserve Deputy Sheriff uniform, pistol belt and handcuff sets. I also alerted my partner, a Scot that we call the Laddie from Hell and the radio cracked a reply that he was responding to the scene.

The dispatcher in her professional training was able to give me a description that fit a protestor-the license plate was a rented car, noticeable because it had been recently washed, the
lone individual was approximately six feet tall, and wrapped in a long coat of Salvation Army origin. He was wearing a western hat that kept blowing off and he was an avid sprinter. He was bearded and had long hair which had not been combed. The final comment was that he looked like a scarecrow. He was attacking that station property with hacksaw, battery powered drill and screwdriver.

The approach was worked out in my mind as I sped to the station. I would block the drive to prevent escape and stop the vandalism until the Mad Scot arrived. Then we would take him down, Mirandize him and Nye County would have a resident for awhile to wash cars and rake the cemetery.

In the dim evening twilight but under the glare of the station spotlights the figure could be seen hacking away at the end of the bench that held the dosimeters. Good! Caught in the act! I shouted to the figure to drop everything and put his hands where I could see them. In the nature of most pacifists, response was immediate. I had taken cover behind my vehicle with an engine block and door between us.

At this time the figure turned towards me, the great coat blew open and the hat blew off. Recognition was immediate when he shouted “KEN IT’S ME! NATE COOPER! I radioed Code 4 and canceled the charge from the Mad Scot Brigade. Nate explained that DRI was installing TLDs on all of the stations and he would be more careful when venturing forth into the hinterland. We decided to have a drink before I had to file an incident report for the Brass.
Radiation monitoring was not new to the once-thriving mining town of Austin in 1982. Because of its distant location, Austin was a good checkpoint for anything coming off of the Test Site. Local families were given testing devices by the AEC to place outside their homes and TLDs were distributed in the 1950s. For the CEMP network, Austin closed a circle, but its location made it difficult to maintain. Its diminishing population size, currently 340, made it difficult to find and keep Station Managers. Distance, population and DOE downsizing of the program in the mid 1990s, signaled the station’s removal.

**Nate Cooper on the Austin Station:**

**Question:** Why was the Austin station removed?

**Nate:** It was difficult, among other things. It was out of the way. It was almost 250 miles round trip off of the route, if you will. If you didn’t have to go to Austin, you could go from Tonopah directly to Ely.

**Question:** It wasn’t really the standard downwind track, was it?

**Nate:** Not really. However, one of the plumes, though, as detected in the early monitoring did go in that direction. This was atmospheric testing days.

**Question:** Is that why there was a station there?

**Nate:** Yes. And the location filled in a little bit of a hole in the circle.
Beatty Station – Station Manager since 1981

Question: When did you first become aware of the CEMP program?

John: Nate Cooper and Will Cochran, who worked for the EPA came and talked to me. In 1981, or it might have been 1980. So that was the first I’d heard of it.

Question: So you were a monitor, a station manager from ‘81 on?

John: From original group.

Question: What made you want to be involved in the program?
John: You’re asking about a long time ago, 20 some years ago. I’ve always thought that the Test Site was an important program, set of programs. And I knew that at some point they were going to have to involve the communities around it because of Three Mile Island, which had nothing to do with the Test Site, and other things that had happened. They just needed to involve the communities. And, I thought, why not me?

Question: I know you’re retired now, halfway retired?

John: Right.

Question: But what was your profession at the time you started monitoring?

John: I was a schoolteacher.

Question: What subject did you teach?


Question: Do you think being a science teacher affected how you viewed the monitoring?

John: Yes, I do. Because I had taken physics, not a whole lot of radiation physics or anything like that but, I wasn’t afraid of doing it. There’s a lot of people afraid of having anything to do with “radiation.” They panic.
Question: What do you think the program brings to your community?

John: That’s a really good question. Most of the time it does nothing. Where I can really say it made a big impact was during the Mighty Oak problem, which coincided with the Chernobyl thing, and we got more press. I talked to more people in those four or five months than I have at any other time. Most of the people don’t even know that it exists. Or care less but, when things went bad, that’s when a lot of people already knew it was there. Then they decided, “Maybe I ought to go check it out, see what’s going on.” So it was at least weekly, people were talking to me. At least weekly, I won’t say “daily” because it probably wasn’t daily, but at least weekly for several months.

Question: “Mighty Oak”?

John: Yes, that shot that vented. It happened at about the same time as Chernobyl. It was kind of neat because about two years earlier, we’d gone out and visited the tunnel of Mighty Oak. We got to go in and look at some of what they might’ve seen. Obviously, the device wasn’t there yet so we got to see the tunnel and then, two years later they shot it and next thing it went everywhere. I mean, it went haywire and everything that could go wrong, it went wrong. There were people that said, and no, not Beatty people, people said that the Russians did their Chernobyl accident to cover up the Mighty Oak. I mean, that’s how naïve people are. The Russians are still having problems. We may never know how many thousands of people died from it. They just don’t keep records.
Question: How have people in the community demonstrated an interest in the program?

John: Really, it’s not much. We’ve had several town hall meetings and, if it wasn’t for my parents and my family, and a few other people that I know, friends, then probably no one would have come. You can’t blame the people. You know, they just don’t care. Or just don’t know.

Question: Is it because of the testing moratorium that it’s really not an issue? Or was it while they were still doing underground testing?

John: We were still testing when all of this started. And still people really didn’t care. I don’t know why. I wish I did know why people don’t care but it’s like that for everything. Unless something really happens, people just don’t in rural areas, I guess. I don’t know if it’s like that everywhere.

But if something happens, we have town hall meetings of all kinds. We have community, boards, and nobody shows up unless something happens. I mean, they’ll go for years and then it’ll be the same people every time that show up, you know, four or five people.

John: But when something really hits the fan, then they all show up.

Question: Do most of the people in Beatty work at the Test Site or for the government?

John: No. At one time, lots of years ago a lot of people worked there, but now, off the top of the my head, I can only think of one person who works at the Test Site.
Question: So the station’s been here since ‘81?

John: Well, the original, it’s been moved twice. Originally, it was at the school up here. And then they had to move it because the school had to build something right where it was set. So, we moved it. We thought of several different places and unfortunately, we didn’t move it where it is now. We put it over here at the firehouse. It was a bad spot.

Question: Not enough people passing by here?

John: Really bad. They didn’t even see it. Didn’t even know it was there. Then we moved it from there to the post office, which works. The school was a good spot because kids would go out and see it all the time. When they had events, people would walk by and look at it so it got attention when it was there. It was a good place. It’s in a good place now.

Question: Did you use it when it was there for teaching your classes?

John: Oh yes. I’d take a couple of classes a year out. I mean, several times. First of all, they didn’t even care about what it was. They thought it was part of the school so they didn’t care. After we went, then bunches of them would go look at it.

Question: Has anyone ever asked that the station be removed?

John: You mean from Beatty?
Question: Yes.

John: No. Not to my knowledge. And you know, other than when the school asked that it be moved, and they weren’t even against moving it someplace else at school. They didn’t object because it was there. They asked that it be moved because it was just in the wrong place.

Question: Why do you think your community was chosen for monitoring?

John: Well, they were choosing almost all of the communities around the Test Site. I don’t think we were singled out. I think it just that there’s one in almost every community around the Test Site. And, then some places where they’re not even in the communities. I think it’s just to make good coverage so that there’s no gaps. And I think that’s important, to have no gaps. Because sure as heck, if there’s a gap in there somebody will accuse you of allowing that gap because that’s where it goes.

Question: Has having the station in your town changed the way people perceive nuclear testing?

John: You know what? Having the station here hasn’t changed a lot, but because I’m a community monitor and that’s what they originally were called, and I have a hard time getting away from that, and because I was a teacher, I used a lot of the materials that they gave me and I gave it a positive light. And it had nothing to do with my being a community monitor that I gave it a positive light. It’s just that I believed in the program. No one brainwashed me to believe in
the program. I believed in it before I ever took any of the classes. I believed in the Test Site before I took any of the classes.

I just knew more about it. And, I was able better to present it to a lot of the students. There’s still a few kids that I see. It’s like anything, they don’t remember a whole lot. How much do you remember from when you were a freshman?

Question: Not much, unfortunately.

John: Right. Anyway, there’s a few that do remember. The station hasn’t changed much but because I was a monitor it changed some.

Question: How has having the monitor be someone from the community made a difference in the effectiveness of the program?

John: It makes all the difference in the world. I have never been accused of being a brainwashed lackey of the Department of Energy. I never have. I’m sure some of the other monitors have. I know Jack Heppler from St. George was. Yes, Jack Heppler had a lot of problems over in St. George. He handled it really well. He did a great job. But it’s a great thing to have somebody that has lived in the community for quite a while before they became the monitor. So that they’re already established, they have some credibility before they ever become a monitor.

Question: What do you think about the training that you’ve received over the years?
John: Great. I was fortunate to get in on the program right on the ground level so we went to the University of Utah and spent a couple of weeks there. Originally, for the first several years, they did it twice a year, so we did a lot of training and that training, more than anything, helped my schooling, helped me become a better teacher.

Question: Did you participate in the whole body counts that they did?

John: Yes, I did. For a couple of reasons. It worked out to be kind of interesting. Not long after this started, there was a fire out here, and I was a volunteer fireman at that time. We had to go out there because it was claimed that radiation was involved in it. There really wasn’t. It turned out that there wasn’t any radiation. It was other stuff that was burning. And, I had to have a whole body count because of that. It was kind of interesting that I’d already had two before that from the community monitoring program, and so it was kind of interesting. The same people did them. Although we went to the Test Site to have ours done.

Question: You didn’t come to Las Vegas?

John: No, the fire department did it. But, it still was the same people. And they used the fact that I had a background, that nothing had changed between the two tests.

Question: Did your family do it as well?

John: Yes. Not the fire thing.
Question:  No.

John:  But yes.  Oh, my daughter loved it.  She loved that fifty dollars.  They paid us fifty bucks
to go do it.  And, she got to sit in there and watch cartoons.  She couldn’t wait to do it.

Question:  I’ve heard something about you and Gennie pouring the slab for the station.

John:  Yes, we did.

Question:  Is that the slab at the post office?

John:  Yes, the one where the station is now.

Question:  Why did you do that?  It’s unusual.

John:  Because there was nobody else to do it and I volunteered.

Question:  Really?

John:  I mean they would have had to bring somebody up to do it and I said, “Why?  I can do it.”
I poured all the sidewalks around here.

Question:  It’s kind of above and beyond the station manager role.
John: Yes, but it was no problem, and it took us (John and his wife, Gennie) a couple of days to do the whole thing. It wasn’t any problem.

Question: Do you have any other stories about the program, anything you can recall that you’d like to share?

John: Did you get a chance to talk to Marg Herndon?

Question: Yes, I talked to Marg.

John: Did she tell you about about the time she got body-slammed?

Question: Yes. At one of the training sessions?

John: Yes. I can’t remember, it’s been quite a while back and I can’t remember why he did it.

Question: I think she wasn’t taking it seriously enough or something.

John: The guy was too serious. I don’t remember exactly why he did it, but he did it. But that was quite humorous. That was the time I believe, that, Mark Howard from Tonopah found out he was claustrophobic. He was in that Class A suit and he got in there and he said, “Hey, I gotta get outta here.” We were doing an exercise and he had to get out. We were talking about that earlier this summer. Brian, Mark and several of us were standing around talking about some of
the old trainings that we did. It was pretty interesting that that happened. There was one training, it was a fun one too, and it may’ve been the same one, that Brian Brown and I were TV crew and he was the cameraman. I had brought my camcorder. We did it, and I got right in their face. They put the cops on me. Those exercises were fun and to see how obnoxious these people could be.

The reason I did that is that I had been involved several times when the media had been there, and I just tried to do what they did. I probably overdid it and wouldn’t take no for an answer. It was fun to do that. And the people that were involved enjoyed it in a way. They didn’t enjoy it at the time because it was a pain in the butt but they learned a lot. How obnoxious the media can be. And I’m not pointing any fingers at the media. They have a job to do.

Question: You’ve been with the program so long. What do you think its future might be?

John: That’s a good question and I wish I had a little crystal ball and could look into it. Heaven forbid that we ever have another disaster. I can see it going away. Purely monetary, I mean, just budget. Everybody has a budget problem and I hope it doesn’t impact the program. Excuse me, everybody is human and the people that work at the Department of Energy and other facilities like that, they’re humans and they just tend to forget that there’s other humans out there. And they’re not afraid of it and they do things that really, really, in retrospect, become dumb.

I don’t know. It’s really bad when something goes wrong. An example is in Rocky Flats. This was just since we stopped testing, right off the top of my head. There were some scientists that were working in a lab and they rewired their lab. The scientist rewired his lab and used a regular outlet and upped it to 220. And he knew it. No one else worked in that lab. It was a
little tiny place half the size of your bathroom and he had an outlet that was 220. I mean, that’s not good. That’s not a very good example, but other kinds of things that happened. You know, that they’d become so ingrained in what they’re doing that they’d forget what’s happening. That’s why I don’t have a real big problem with people that are against testing. The Nevada Desert Experience, I believe that’s what they’re called and the same way with the Sierra Club and Greenpeace.

I don’t particularly care for the way they do things but they’re very necessary because government entities do exactly the same thing, only the opposite side, and that’s the only way we ever have checks and balances. I really wanted to talk to Bruce Church to ask why they put those soldiers in the trenches way back when. They didn’t need to do that. That was really not very smart. I’m sure they had a reason for it, and I don’t know what it was. In retrospect, it turned out to not a great idea. They knew a certain amount but not everything. A lot of it again, is just that when you work around it so much you forget what’s going on. And they knew how harmful radiation was. I mean, those doctors that were taking X-rays of their hands until it turned red. That’s how they calibrated their X-ray machines, back then in the ‘30s. In the 1920s, ‘30s and early ‘40s, they didn’t know. By the time the ‘50s came along and they were conducting the tests out here, they knew the effects of radiation. You know, they didn’t have to do that.

I know that they had to do above ground testing, and, in retrospect, some of the stuff that they did was probably not very smart. You know, when they did Dirty Harry and they put it right up next to the mountain? I don’t know why they put it there. I mean, there probably was a reason, but they probably should have put it further out on Yucca Flats.
Question: Someone said this about the program, “It was a good program but it was too late.”

John: I agree. The horses were out before. It should have been done if not in the ‘50s, it should have been done at least in the ‘60s. But, in those days, in the ‘50s, everybody was still close to World War II. At the time, Senator McCarthy was going crazy and the Red Menace was there. Korea was there, and people were afraid of the Russians, and rightfully so. I am a person that firmly believes that had we not had this testing program we’d be speaking Russian today.

Because the Russians were testing.

Although they learned a lot from our testing, they were afraid of us. I firmly believe they would’ve come in here and we would not have been able to stop them, because they would’ve had nuclear arms and would’ve known how to use them and would not have been afraid to use them. I believe that our testing program stopped them. They were afraid of us. You know, I may be wrong, but I have to be shown that. I’m not from Missouri. I don’t have to be shown, but somebody has to convince me that I’m wrong on this.

They did have people doing our jobs, but it was all EPA and, at that time, AEC and later ERDA and all of those people, and even though they have all of that information, the Sierra Club, the downwinders, and all these people, they just don’t trust them.
Question: Credibility?

John: The credibility is not there and I’m not saying that without foundation. There is some, degree of lack of credibility. I don’t blame them, and a lot of that has to do with “classified,” quote, unquote. But a lot of it doesn’t. And here again, the government will get away with whatever they can get away with, and again they’re just, when I say “the government,” these are just people.

Question: People have told me a lot of stories about how government agencies interacted with various rural communities when test shots were going up.

John: And they speak in Governmentese.

Question: Ken Giles tells the story how he could go out and say, “There’s gonna be an event. I can’t tell you what it is. I can’t tell you when it is. Might be Tuesday. I’m not sure. But there’ll be an event,” and it’s things like that. The “need to know” mentality, I suppose.

John: You know that was really ludicrous, to be honest with you. Just because he was there, people knew. We were trying to hide this stuff from the Russians, or who else? How dumb did they think the Russians were?

Marj Jones would call me after the shot and she would tell me all the information. Which was fine. That was her job. Afterwards was fine. But it got so that when she would call me I would give her the information. I knew because all the white trucks were here and some of the
guys and I would go to lunch together, or dinner, or have a drink at night. It didn’t take much, here I was just a lowly nobody and I figured it out. If this was the reason, and I’m not sure this was the entire reason, and they were afraid that there was a mole here, or anywhere, I mean, how long did it take for them to figure it out? Especially the above ground shots, we used to know because we would go up on the hills at nighttime and in the mornings and watch them.

I remember going back up here on top of these mountains. We couldn’t see Ground Zero but you could sure see the flash. And see the mushroom coming up. I was just a little tyke at that time, but if that’s what they were afraid of, we knew. Because we went out there early, three o’clock in the morning, four o’clock in the morning, so somebody else would’ve known. They could have gone up on top of the mountains anywhere. It really is absurd.

Question: It’s been my impression from interviewing the station managers that, especially in the early years, there was very much a family orientation to the monitoring network, that it seemed to me from interviewing and documentation, that came from Nate. The bones of what the program should be were laid out by Bruce Church and Chuck Costa, but it seems that the heart of the program that made it unique, came from Nate. Would you care to comment on that?

John: I don’t disagree with you, because my boss was Nate. Not Chuck or Bruce Church although I thought the world of both of those guys. I got to know Chuck Costa another way, through a program called Science Now. I got to meet him several times, although I already knew him. Bruce and Chuck didn’t interact so much with us as Nate did. If you had a problem, you talked to Nate and he dealt with it. Or he might say, “Now John, you need to go to talk to this
person.” It was his program, we worked for him, and it wasn’t one of those things where he said, “You work for me.” He didn’t do that. He would say, “If you have a problem, call me.”

Question: Did you ever have any interactions with other station managers on things? Besides when you were all at the training?

John: Yes. Almost all of them were science teachers. So I would see them, the same people, at other programs that didn’t have anything to do with the community monitoring program. I would see them at the training and I had met these people earlier but I didn’t know them. But through the community monitoring program at that time, I got to meet them and know them and we became basically “a family.” Then, when I would see them at other times, we would sit and talk and shoot the breeze so in that way, it helped.

Question: Do you think it’s an extraordinary way for a government-sponsored program to work?

John: In a lot of government programs, you’re numbers. You know, they’re so big that you’re numbers. And this was a University of Nevada program and Nate and Marg and Marj went to all of the meetings. When we went to Salt Lake City, both of them went. Marj and Marg both went and, as a matter of fact, I flew on the plane sitting next to Marg and I think coming back I flew sitting next to Marj. That was the first time I’d ever met them.

When we were in Salt Lake, we went to dinner together and we went out to Benihana’s together and there were several of the community monitors that were so far out in the sticks, this
was their way of socializing. And we had quite a few people that were very social people. They had a good time and it was important. It was part of the deal.
Brad Benson – Station Manager since 1996

Question: When did you first become aware of the CEMP program?

Brad: It was eight years ago, 1996. How I became aware of it was that DRI decided to put a station out here in Boulder City and they went to the mayor and asked him if he could recommend somebody, and the mayor recommended me. At the time my wife and I were on vacation up at Idylwild, California. So they called me up there, and at that time there was a lady, she was a great lady, Juana Blackburn, she’s the one I worked with. And then Russ Cullison.

Question: Did you work with Nate Cooper at all?

Brad: Oh sure.

Question: Did they come out and talk to you about the program?

Brad: Yes, they came out and talked to me about the program and they wanted me to select the site and get it approved by the city, and actually we originally picked one that was at the convention authority visitors’ center out here. We selected that one first and the DOE people put it in. And, it was in operation not even a year when it was severely vandalized. That became touchy because it was federal property, and I remember being interviewed by the FBI. Then,
they asked me to pick a new place, so we got St. Jude’s. Father Ward was running it at that time and I knew him well and I went and talked to him and he was amenable, and then DRI came out and talked to him, and so that’s where we put it, and it’s been there ever since.

Question: What made you want to be involved with the program when they first presented it to you?

Brad: I’ve been involved in nuclear weapons since 1950 and am very interested in them. I was always interested in the Test Site and in Yucca Mountain when it got going. It was explained to me that really this had these 24 stations now all around the Test Site. It really is, to me, as a guy that knows the program, a waste of taxpayers’ money. But it’s a necessary one. Because there’s so many people hooked in with the attitude of the Nevada politicians, anti-Yucca Mountain, and so forth, this is very necessary just to prove all the time that there is no nuclear activity. So once I understood that, I thought, “Yes, that’s a good thing, I’d like to participate.” And I knew if I was involved in the program, I’d get to know more about it.

Question: Have you had any interaction with people in the community about the station, or when you’re working the station has anyone ever asked you what you do there?

Brad: Some, yes. A couple of times I’ve asked the mayor to put me on his agenda, and I spoke before the city council. That’s on TV, taped and it’s shown, so I thought that was good, to let the community know about the program that way. I’ve had people come out, some of the St. Jude people. They had a big open house recently and I went there because there’s quite a few people
that come over and talk. But it’s not a constant thing. I would say that the station has settled into this community and it’s just a part of it. And this community is not vocal on the anti-nuke issue.

Question: What was your profession before you retired?

Brad: I was a fighter pilot in the United States Air Force. Thirty-two years. I retired as a colonel. Then I managed a True Value in Champaign, Illinois.

Question: Do you think your profession, because you were in the military, do you think that affects how you view monitoring or testing?

Brad: I’m sure it does. We started carrying nuke weapons way back in the early ’50s. The Air Force has never had an accident with a nuclear weapon. Why? Because we understand the system, we go strictly by the book, and there’s no deviation. You deviate, you’re dead. The Air Force doesn’t tolerate it. I’ve been through the Yucca Mountain program and I’ve been through the Site. I went on the tour again this summer and I’d like to do it again, but I’ve been there. And I’ve seen other things. I think it’s like the Air Force. A nuclear program properly used, properly supervised, I don’t feel is a danger. I’m a firm believer. I feel I’m one of a minority that’s educated in the program. When we lived in Champaign-Urbana I invested heavily in utility companies that had nuclear plants. Some 16 percent of our power in the United States is nuclear. 80 percent in New England. If they took them all off line tomorrow, we couldn’t survive. So, it’s safe and, to me, it should have kept going but the anti-nuke people were able to
stop it, and we haven’t had any plants come on line in a long time. I talk positive about it and because I’m an activist out here, I’m well known, and I think people, when they know how I feel about it, it kind of helps.

Question: Why do you think Boulder City was chosen for a station?

Brad: I was shown originally that they wanted to have stations around the Test Site, but also there is new low level nuclear waste that comes up and down the highway. When people say something about that, I tell them about our hospital which I was on the board for eight years, all the low level nuclear waste we generate there.

Question: Do you think having the station in the town has changed the way people perceive testing out here. Have you had any feedback?

Brad: Well, I’ve had some from people like the mayor and the city manager. It’s been here so long and it’s run so nicely. I think this has a soothing effect. I think if it ever came to where there was a problem, it would be easier to interact because they’re familiar with it. You know, I think it has a definite impact. It’s one of those things that, because everything is safe and running properly, the city has other problems to focus on so, they don’t get excited about it.

Question: What do you think having people from the communities be the station managers brings to the program?
Brad: I think it’s the only way to go. I love those times we have our workshops, when I meet my peer group from right near the Test Site, Rachel and Goldfield. I think a program without those people being from the community would not be successful at all. They would feel, the same as here, that it works because Linda and I are part of this community. Linda’s just an excellent co-manager. They know it’s here and so there’s a degree of trust. I think if you had anybody else it wouldn’t be as effective. And we’re right here. What’s nice about this one is that every day I’m out. Three or four times I go down and I drive right by it. I’m always looking at it. I stopped in, like this morning when I was by the station. But, I stop in most days anyway just to look around. I don’t mean stop, per se, because Craig has us read it on Mondays, Wednesdays, Fridays, and then the following Monday, so those are days when you have to. But the other days I always drive around just to take a look.

Question: There hasn’t been any vandalism problem over at St. Jude’s?

Brad: No, not a bit. And I sometimes talk to, Father Ward isn’t there any longer, but, the people that run it now. I sometimes just go on in and discuss it with them once in a while, “Why don’t you take the kids?” Because that’s a beautiful place, you know. Those kids come from abusive families.

Question: Did you attend training sessions?

Brad: Yes, even the first year they hired me but they didn’t have the station here yet, I went. They were paying me but they had me doing other things. There’s that transportation committee
that Frank Di Sanza chairs. He was a Boulder City guy at the time, and I knew him, and so they had me attending. From that I got to know people of similar values. Well, Jon Porter is a U.S. congressman and I am good friends of him and his wife because we knew them when they were out here. He was mayor here, and then he was a state senator and he was on that transportation committee also. They kept me busy at first.

Question: What was your opinion of the training that you’ve received over the years?

Brad: I think it’s professional and educational. When I first started going up to the ones at Brian Head, I thought we talked more about our station and what we do, but then I realized no, they’re educating me in other aspects of the program, particularly when we got those high ranking people like Bruce Church. Fascinating guy. Sometimes I thought a couple of the guys from DOE were a little much but, I think the training’s excellent. And I don’t know that it helps me down here any, but it personally helps me. I think it broadens my view.

Question: Did you ever participate in any of the field exercises that they had?

Brad: Oh yes, you bet I did. Lynn runs a lot of those, you know. And then one time he had Marg Herndon and I as the guinea pigs. We were supposed to be in a car where we had an accident, a nuclear accident. Marg got a little saucy with the police. She and I both got slammed to the ground. The police came up and they handcuffed her, and I got lippy and so then they handcuffed me and they threw us in a car. In fact, Marg has pictures of that. She used to put them on the bulletin board a couple of times. I thought it was a good exercise. I really thought
the guy enjoyed handcuffing us little too much but, Lynn made a good job of it. He had it all planned out and we could see what this team can do and how the police fit in it and so forth. And again, that you just keep your mouth shut and follow what they do. It was held right down there by the hotel in Brian Head.

Question: Have changes in stewardship affected you at all, or was it fairly transparent?

Brad: When I came on they had EPA. Instead of sending our report to Craig, it went to EPA every time. They were very good. They took me through all their offices. I saw how they test our samples that we send in. The change to DRI really didn’t affect me. I didn’t think at first that the DRI was quite prepared for the turnover. To me they weren’t as professional as the EPA people. But they are now. But there was no problem during the transition at all.

Question: Is there anything else you’d like to say about the program?

Brad: I enjoy being a part of it. I’m an older guy and I’m one of these people that wants to contribute something. I find so many of my peer group that say to me that they paid their dues in life, so they don’t do anything. They’re just couch potatoes. I started out in the Air Force, 19 years old, a fighter pilot in combat already, no education. But in the Air Force, I got my regular commission my bachelor’s degree and master’s. I think I have something to lend to society yet, and why not? So this fits right into it. That’s why I like being a part of it.
Ann Smith – Station Manager since 1999

Question: When did you first become aware of the CEMP program?

Ann: I think I was aware of it, probably, at least eight or nine years ago.

Question: Were you familiar with the program before you became involved with it?

Ann: No, not really. I just was aware that they had the monitors but I didn’t know much about them.

Question: How did you come to be involved in the program?

Ann: My fellow teacher had been doing it by himself when the other person who was doing it left the community, so he needed some help and asked me if I would be willing to.
Question: Who was that?

Ann: Brent Perkins.

Question: What made you want to be involved?

Ann: It was kind of an interesting situation, you know, the monitors and everything. He just put it that he really needed the help, I guess.

Question: What do you think the program brings to your community?

Ann: Well, to me, it brings kind of a comfort area about what the conditions are as far as the environment and what could possibly happen. And, there was a training I’ve had with nuclear and gamma radiation and everything. It just made me feel a lot more comfortable about where I’m living.

Question: You are a teacher, right?

Ann: Yes.

Question: And, what do you teach?

Ann: Third grade.
Question: Do you think your profession affects how you view the monitoring?

Ann: Somewhat, because I’ve taken my class over to it and we’ve looked at it. And, it makes me aware. I’m also involved through the school. They set one up at the school so, I’m involved with that, too. I kind of get a double dose.

Question: They set a monitoring station up at the school?

Ann: More of a weather station.

Question: How do you think the station and monitoring is viewed by the community?

Ann: The people who I’ve visited it with are interested in it. Then, there’s some people that don’t want to listen to anything. They close their minds to anything that might be beneficial to gain from it. We haven’t presented to a lot of people. I know we have talked about doing that, going around and seeing if we can get people to be aware of what it actually does. I know Brent was telling me the other day he had somebody come up that was reading the numbers. He said he spent almost an hour there speaking to people about it but they weren’t locals really. And, the few locals I’ve had, it’s, ‘are we going to be melting today?’ or anything like that. It’s usually just passing comments from local people.

Question: How have people in the community demonstrated an interest in the program?
Ann: There’s been a few that, have said, “Well, I’ve seen these things for years, what do they do?” and I’ll explain it to them. There’s been a few but not a lot.

Question: The Caliente station is right by the railroad tracks, right?

Ann: Right. Always been there.

Question: Why do you think Caliente was chosen for monitoring?

Ann: Well, I suppose because of our location and being a major transportation center as far as the railroad goes.

Question: Do you think having the station in your town has changed the way people perceive nuclear testing?

Ann: Those who are open to it, are pretty open to it. And, those that are not, won’t even listen to us.

Question: Was any other kind of testing done in your community, water or milk testing?

Ann: They have tested the water. We don’t have any dairy cows.

Question: How involved does the community get in the monitoring?
Ann: Now, when they’ve had at the fair. DRI has come up and put some things in the fair and that’s probably helped some people. That’s been beneficial.

Question: Is that the Lincoln County Fair?

Ann: Yes, they’ve done some at the Lincoln County Fair. Had some booths and, I think, that’s helped some people even be more aware of what it is.

Question: Has anyone ever asked that the station be removed?

Ann: Not that I’ve ever heard of.

Question: How has having the monitor be someone from the community made a difference in the effectiveness of the program?

Ann: Well, the fact that they know who we are, I think it makes people feel a little bit more comfortable that, it’s not some stranger coming in and saying that, this does this and this does that. I think it helps having local people doing it so that they know that it’s somebody they could ask questions to.

Question: How have changes in the stewardship of the program affected you?

Ann: I don’t think that it’s affected me at all.
Question: What did you think about the training that you’ve received?

Ann: I think a lot of it has been really good. Sometimes, we’ve had questions where we’d get back and seemed we’d hear one thing and think we’re doing it right and we haven’t done it right and, so, we get corrected on it. But, there hasn’t been a whole lot of change. I’ve gleaned a lot of information from it.

Question: Do you have any other stories about the program that you’d like to share?

Ann: I’ve had a few people come up while I’ve been doing it that probably weren’t even aware that it was there unless they see me taking care of it. And, they’ll ask a few questions and I’ll explain the readiness program and things for testing and they’re quite surprised to hear that we’re actually, you know, prepared for anything like that.

Question: How about your personal involvement in the program, what do you think it’s brought to you personally

Ann: Just more of an awareness of what’s around.

Question: Do you think having the monitors in Nevada and Utah creates sort of a network?

Ann: Yes. I think that’s good and very effective because we can see what other areas are experiencing.
Cedar City, UT

Station Established: January 15, 1982
Current Status: Active

Current Managers: Donald Newman
                 Ruston Taylor

Former Managers: Melvin D. Baldwin
                 Glade V. Sorensen

Don Newman – Station Manager since 1988

Question: When did you first become aware of the CEMP program?

Don: When I started, Glade Sorensen was still the station manager here. I started as his assistant. I was there three or four years before Glade retired and so he went emeritus around ’92, ’93. It would have been 1987 or ’88 approximately, fifteen years or so. And, I became the assistant station manager to Glade Sorensen.

Question: What was your opinion of the program before your involvement?
Don: I didn’t know a lot about it before my involvement. And then, when I got involved, I learned what was going on and I became very impressed with it because, back then, we were still testing.

Question: What made you want to be involved in the program?

Don: Just the general aspect of it. I teach science. It’s involved with science and the testing down at the Nevada test site and so forth and the information I received because of that.

Question: How do you think your profession affects how you view the monitoring?

Don: As a science teacher, I see it as a lot more practical than most people would. I can see the practicality of it and the importance of it.

Question: What do you think the program brings to your community?

Don: I think it brings awareness. You know, in the last seven or eight years, I probably have had a half a dozen questions a year but I still get an occasional question of what to do and this kind of stuff and why is it here. I think it gives them a little more awareness of what is going on and what it’s about.

Question: How have people in the community demonstrated an interest in the program?
Don: Earlier, they demonstrated a little, when they were still testing down at the test site there was a little more interest. But, since the end of testing, I’d say I might get half a dozen questions a year but not a lot. I’ve had people from the college ask for air quality information but not a lot of information has been asked for.

(Lynn Karr, Field Monitor, participated in the interview.)

Lynn: Most of your students knew what the equipment was?

Don: Yes, I use the equipment in my classes all the time and the information from it. I teach biology. We talk about radiation and I might bring up the equipment and what it’s designed to do. They are probably more aware of it because of my class than the adults in the community.

Question: Do you know how long the station has been there?

Don: In the early 80s, it was in Mel Baldwin’s backyard for a while.

Lynn: It probably was one of the original stations up here.

Question: Why do you think Cedar City was chosen for monitoring?

Don: I think just the proximity to the test site and the predominant wind direction.
Question: We were talking about this next question. Has the station always been in the same place in your community? So, I guess not.

Don: It has been at the high school for quite a while but it was in Mel Baldwin’s backyard in town for a while, I don’t know how long. I know it was at the high school in ’87 when I started teaching.

Question: Why would they have moved it?

Don: To put it in a more central location and allow public access and exposure.

Lynn: When it’s in somebody’s backyard, it’s a little tough to get to.

Question: How does having the station in Cedar City change the way people perceive nuclear testing?

Don: From the questions I’ve had, I think, the perception is that it’s not as dangerous as they had thought it was. I mean, there’s a lot of misconception in this part of the country, on the testing. And, I think, it’s helped people understand that it’s not an issue. They’re finished with the testing and everything. They can see that today that our readings are not above anybody else’s. So, I think it’s given them a better perception of it.

Question: Was any other kind of testing done, water or milk testing?
Don: We’ve done the water sampling the last couple of years.

Question: Were you involved in any of the physical testing that they were doing?

Lynn: You wore a TLD for us for a while, didn’t you?

Don: Yes, I did.

Lynn: Mel and Glade were body counted and you guys wore a TLD for years.

Question: Has anyone ever asked that the station be removed?

Don: No. In fact, they never say much about it at all. The only time we ever had a lot to do is when they were running a phone line out to the station. I think we set up a cellular, didn’t we?

Lynn: Yes.

Don: And, we had to do some talking because they were going to have to dig through the parking lot in front of the school. It’s been very well accepted. Nobody’s ever said much of anything.
Question: How has having the monitor be someone from the community made the difference in the effectiveness of the program?

Don: I think it’s made us more believable. A lot of people in the community know me and, so, I think it’s made it more believable or acceptable.

Question: How have changes in the stewardship of the program affected you?

Don: Personally, I don’t think it has.

Question: What do you think about the training you received?

Don: Oh, the training is great. The first little while in the program, we had some fantastic sessions, Gary Sanquist and all those guys. I had learned a lot about radiation that I wasn’t aware of and about nuclear energy and so forth. I think it’s been fantastic. And, then, we’ve had some field training that’s been really good. I’ve never done a lot of work with Geiger counters before and, so, it’s been really good that way. So, the training sessions are fantastic.

Question: How about meeting the other monitors? Have you found that helpful?

Don: I got to know a lot of those people which I wouldn’t have had the chance to before but many of them are teachers also. But, like I say, I know a lot of them now that I never would
have met if it hadn’t been for the program because in the state we don’t have situations where
teachers actually get together and all that. So, it’s been good that way.

Question: Anybody ever ask you any interesting questions?

Don: Are we going to die? No. No, really, most of the questions I get are what’s this for,
what’s this do, type situations. I don’t think they pay a lot of attention most of the time, when
they’re up here doing the station is during school and most of the kids are supposed to be inside
in the school most of the time.

Lynn: Occasionally, some of the parents will ask
me questions and I always die laughing. Because,
usually if the kid is around them, the kid will
explain it better than the parent because the
parents always think it’s something it’s not.

Don: I’ll
do my
readings
about 3
o’clock in
the
afternoon

The completed station on Southern
Utah University campus – 2004
Photos courtesy of Bruce Hurley

Installing the new Cedar City Station
Lynn Karr confers with InfoWest
about installing wireless internet
after school is out, so, I’ll get parents coming through occasionally picking up their students.

But, most of the questions are just the purpose of it, what does it do, what’s it’s function, how’s the air quality and I’ll show them the equipment which I really don’t like to do because they’re right next to those coal stacks. Let’s see, this is what the air looks like. But, most of it’s just the information type questions.

Lynn: The best thing about it and I’m surprised, too, is being right in front of the high school, I expected a lot more vandalism, but we really haven’t had that.

Don: We haven’t had any. I think, in the time that I’ve been a monitor, we’ve had 2 lights broken out. But, we have had very, very little, which surprises me. Of course, I tell them, hey, it’s a U. S. government installation.

Lynn: You know what Al Gianotti did, don’t you. He was down working on the station in Pahrump one day and these kids come over and said, “Hey, Mr. G., what’s that there?” He said, “Very sensitive drug sensing equipment.” So, the kids disappeared and nobody bothered the station for ten years.

Don: Good idea. This is a situation where, if you even walk close and you’re using drugs, this will pick it up.

Lynn: That’s what that big sensor is on the side.
Don: And, there’s cameras and they take pictures of you. But, no, we’ve had very little vandalism. I’ve been really quite impressed. Very little.

Lynn: I think the kids knowing what it is tend to leave it alone. There’s no excitement or fun in it.

Don: I tell them if you do anything to this, police will come out with the FBI and you’ll have a federal record.

Question: I guess, when it comes to monitoring radiation, boring is better?

Don: Well, that’s true. Yes, boring is better. You don’t want to go out there and see things. Like I said, up here, I’m sure that if we were closer to the test site, they’d be a little more interested. But, we’re far enough away that it’s not a concern. There was a little bit of interest when all that down winder flare up was going on. You know, my mother-in-law, when my father-in-law died of cancer, she got $50,000.

Lynn: She got the $50,000 for the cancer. You’re originally from? …

Don: Well, I’m from Idaho but my wife’s from Richfield, Utah originally. And, he had the kind of cancer that qualified.
Lynn: Well, I know, talking to the old rancher out in Currant, NV, he told me about pushing cows when the above-ground testing was going on and the clouds would pass and his skin would turn bright red. Yeah, I think he got some beta burns.

Don: See, that’s what they were saying in Richfield. They’d see the green cloud come up beforehand.

Question: Was there anything you’d like to add?

Don: Up here it’s more just information. I tell people if, in fact, they start transporting nuclear waste to Yucca Mountain, I-15 will be a corridor and that’s one reason we’re keeping it here. But, right now, there’s just not a lot going on. There was a little bit more interest in the early days, especially if you’re in this down winder flare up. There’s people that come by but, again, it was more just information. What kind of radiation are we having and so forth. I think most people here are for it. I mean, they can see the benefit of it. They seem to be receptive here as well. I think there’s a fair number of people up here that have had something to do with the test site one way or another. So, I don’t think it’s any strange thing to them.

Rusty Taylor on the program:

Question: What do you think the program brings to this community?
Rusty Taylor: It’s a good safeguard to have there and to have that data that we’ve collected for so long because, if there ever is a question, then we have something already in place with what’s going on. I think that’s mostly what it brings. It’s a great safeguard for future years.

Question: Have you ever had any interesting questions?

Rusty Taylor: I’ve had some people ask if we were monitoring for gold.
**Delta, UT**

Station Established: 1988  
Current Status: Active

Current Managers:  
Tom S. Judd  
Beverly Jean DeWyze

**Beverly DeWyze – Station Manager since 1988**

Question: When did you first become aware of the program?

Bev: From the time the station was put in in 1988. That would be when I first became aware and first got involved, because I’ve been at that station from the beginning. Actually, I was the assistant manager. Tom Judd’s been the manager, to begin with, and now we’re kind of co-managers, and they changed it a bit after a while. There was nothing there until they called and asked me if I was interested and then Nate Cooper and Herb Maunu came out and interviewed me in my home. I got the job and since then I started coming to these training sessions. It seems like it was not too long before we had one of these sessions, so it must’ve been in the summer probably when they did that. I came to the session here to find out what the whole thing was about because I didn’t know anything about it before then. So that’s how long I’ve been a monitor and I didn’t really have an opinion before because I didn’t know anything about it before.

Question: What made you want to be involved with the program?

Bev: Well, it sounded really interesting when they were talking about it. I’m a math teacher, not a science teacher. Tom Judd, I think, is the one who gave them my name. I’ve known him for a long time and he had a close association with my daughters. She used to baby-sit for him and
was his aide in school and she was really, really close to him and his wife. So that, partly, is why he gave them my name. I think they’d already approached another science teacher at the high school, who wasn’t interested. I teach math at middle school. It’s been really a fantastic experience being in the program. I’ve enjoyed it thoroughly.

Question: What do you think the program brings to your community?

Bev: Probably, it’s not as well known as it should be after this many years. But, for the people who are aware of it, I think it brings something positive. I have put some articles in the *Chronicle*, our local newspaper, a few times so that they are aware that there’s monitoring going on, particularly when there was still underground testing. We talked about that to different people and to our students particularly and the fact that there was never any increased radiation during and after a test.

We’ve always had the barograph there, and I know that farmers are aware that there’s “that thing across the street” and farmers’d come over and check the barograph to see whether they should cut their hay or not. If there’s a question, then we’re there and we certainly have lots of information.
Question: Have you ever had anyone approach you when you were actually working on the station?

Bev: Yes, I’ve had several.

Question: And do you remember any of the kinds of questions?

Bev: Oh, mostly, “What’s this all about?” and that kind of thing. It’s also right in front of the school district office so the superintendent’d walk past and say, “Well, are we going to explode?” or, you know, just something like, “Are we going to make it till next week?” But, mostly people are just wondering what it’s about and I’ve explained it and they’ve been interested. I have liked having the brochures there the last couple of years, it’s really nice. I’ve noticed that several of those have been taken at some time or another.

Tom and I have both had people there, and I have taken a class or two there. I think Tom has too, of students to see it, talk about it.

Question: Do you think being a teacher affects how you look at the program?

Bev: Oh yes. I do because I have shared lots of the information that I’ve gotten at these workshops with students and it affects my attitude and therefore probably it rubs off a little bit on the way I teach. My subjects aren’t strictly dealing with this.

Question: Do you think because you’re a math teacher you’re more analytical?
Bev: Probably. The fact is that I have become convinced that it’s a pity we’re not doing more research and development for nuclear power plants. Nuclear plants produce 20 percent of our electricity in the country and they really have a very good safety record and use so much less fuel. We have one of the major coal-fired plants right next to us in Delta, and I’ve seen comparisons with the fuel and the energy and actually the deaths concerned with the coal-fired plant versus the nuclear plant and I’ve become an advocate for nuclear power. I had a science teacher across the hall from me, a few years ago, who was showing, what was that movie they had that was so anti-nuclear?

Question: *The China Syndrome*?

Bev: Yes, and it was all very negative. And she did have me come in and talk to her class afterwards, give a little different kind of a balance sort of a thing. I probably talked to her in the lunch room or something and said I didn’t agree with that. So there have been influences that way. Probably every year, I would say, I’ve talked to the students that I have about what the station’s all about so that they can look at it, because it’s right in the middle of the city park. It’s a ways from the school, but we’ve been there a couple times.

Question: Do you think being so far towards the outside edge of the downwind area has affected how involved your community is in the program?
Bev: Probably some, but I know there are a lot of people in this area who feel like there is much more cancer in our area and they blame it on the downwind. So, I know that that’s still a factor in this area. And I do know of several people who’ve died of leukemia at a pretty young age. I’ve been told that our cancer statistics are higher. I don’t have records of that but I’ve told that.

Question: Have you had any feedback from the community as to how the monitoring is viewed?

Bev: Haven’t had anything negative ever. The feedback I’ve had has been positive.

Question: And how long has the station been there?

Bev: At least, if I’ve been here since ’88, then that’s at least 15 years and maybe longer.

Question: Because you are so far to the outer edge of the downwind or where a plume might go, why do you think they picked Delta?

Bev: I don’t know. We’re quite far west and so we’re kind of in that corridor, Cedar City, Milford, Delta, we’re just straight in a line. Probably because it’s out in the desert where there’s kind of a natural corridor in between the mountains there and we’re coming straight up from Milford. I don’t know. I guess I never asked them why they picked Delta. I just said, “Okay, cool.” And they did have one in Salt Lake, when I started.

Question: Has the station always been in that spot?
Bev: Yes.

Question: Has having the station in your town affected how people would view testing?

Bev: I would say, the ones who paid attention probably would think it’s better, the one’s who’ve asked questions but like I said at first, I don’t think it’s had as big of an impact as one would hope. I’ve talked to a lot of people over the years but in that many years you have to have talked to a lot of people. Hopefully, the students that Tom and I have had, because he’s a teacher also, would feel a little more positive about testing because of that.

Question: Have they done any other kind of testing in your community?

Bev: We’ve had water testing. And I think we probably had soil testing at some point and we’ve had kits at one point or another where we’d be checking for radon.

Question: Were you ever involved with any of the body counts that they did?

Bev: I went to the EPA lab once, but I never did a body count. We went to Las Vegas for workshops, because they did them twice a year. We came to Brian Head in the summer for a week and then we had two or three days in Las Vegas in the winter, which was very nice.

And we had tours of the Test Site while they were still testing. I’ve been out there twice, once while they were still testing and once since. Then another time up to Yucca Mountain and, to be able to say you’ve been to these places makes a difference when you’re talking about it,
that you’ve seen them. It makes a big difference to what I think, when you go a mile into the mountain before you see where they’re testing, then you think, “Well, you know, this isn’t quite so bad.” We went clear back to where they were going to be setting one up. It wasn’t there yet, but where they were in preparation, and all the little side tunnels, and it was really interesting.

Question: How do you think having the monitor be someone from the community has made a difference in the effectiveness of the program?

Bev: I think that makes a big difference because I think that people are more inclined to believe people they know, than somebody, a person from the government. When they have questions, Tom and I have a quite a bit of credibility, after teaching for as many years as we have, and so we’re pretty well known. You teach, I start thinking of 120 students for the last 19 years and then I substitute-taught in high school for eight years before that so, there’s a lot of people. And there’s certainly as many that know Tom. I think the fact that we’ve been there and been doing it for a long time and the way we feel about it, we’d have a lot of credibility, a lot more than somebody else doing it.

Question: How have changes in the stewardship of the program affected you?

Bev: DOE and EPA were both involved to start with. We had a whole list of acronyms at first. And, personally, not too much except for these sessions has changed quite a bit. They’ve gotten a lot shorter and the types of things that they’ve covered has changed a lot. Of course, that’s
because of stopping testing. We had some really interesting sessions. They’re not as interesting as they used to be.

Question: They’re not?

Bev: I mean, they’re fun and they’re interesting and they’re enjoyable, but we had some extremely fascinating things when we first started and it’s interesting how they’ve evolved. I think we were probably a little bit closer. I think even, just, the fact that when we were here, they used to have the barbeque at a different place, and I don’t know why it seemed different, but it did. We’d go down to it. I think it was Duck Creek several times, and then there was another place another time. They had a local man who did the barbeques. We’d all travel over there and of course you went past Cedar Breaks. To go over there and then you’d stay for a while and visit. I remember Bob Taft. He was there one year, and my daughter used to come. My husband is a farmer and so when I was free in the summer he was always really busy, so he was never able to come.

My oldest daughter had already left home, and so my second daughter would come up here with me, and she started probably when she was about 15 and came every year and usually, even when she was in college, she was willing to come. I remember this one time, we’d gone over and she said, “Well, let’s eat and go back,” and didn’t want to stay and talk, “Don’t talk,” you know how daughters are. Anyway, Bob Taft was talking and we stayed for a long time and she was really interested. He was talking about how he has a house that was just down the hill from Louis L’Amour and, that was his neighbor. Then he’d just been on a trip to India and had taken, this safari kind of thing where they were riding elephants, and he said at one point all the
natives just jumped down. They saw this yellow puddle and they jumped down and they were all scooping it into bottles, and it was rhinoceros urine and it was supposed to be this wonderful aphrodisiac. He was such an interesting, interesting person.

Some of those first years when Nick Aquilina would come and talk about the testing and when they did the shared testing with the Russians were interesting. He was talking about how there was a case where Russians came over here, and this was back probably late ’80s still, so when things were still way different than they are now. When they first came over here and they didn’t go through all the barriers that normally it would take to get here because they just had decided to do this shared monitoring of testing so quickly. They came over here and they took them to, someplace like a Wal-Mart and the Russians truly thought they had just set it up for them to impress them, and so they took them to another store like that and they figured really that they had two of them that they were doing. Finally, they took out the Yellow Pages and said, “Pick one.” They really couldn’t fathom so much stuff, and I’m sure that that’s true. This kind of gives you a perspective, when you hear people talk like that, to make you realize how blessed we are to be in the United States and what a really cushy lifestyle we all have, how lucky we are to have been born here.

Also with those first training sessions that we had here, when Gary Sandquist was doing them and arranging them, it was a real learning experience. We had the opportunity of earning credit. I think we got three quarter hours for that. It was compressed enough that getting three quarter hours of credit, if we wanted to, was very helpful to me because I had just gotten my master’s degree and the next lane change was master’s plus 45 hours, which was pretty tricky to get in the ten years they were allowing. So, it was very helpful to be able to get some credit. And it was interesting credit, not just taking whatever was available, because it was there. So I really
appreciated the fact that I had a chance to earn credit, and we did from the University of Utah. Then we did a few years later when Kelly Bringhurst from Dixie College did it.

They sent me a certificate to say I’ve had so many hours, because in Utah we have to have so many hours of training to recertify, so I can count it for recertification. They’ve given me a certificate for that, which has been really helpful, too, just because I’m spending quite a few hours here. To get that many hours of training, saves me from having to go to a workshop or something that I’d have to pay for. Some workshops I love going to and some are less interesting, so to go, just to say I’d gone, rather than being able to pick and choose what I wanted to go to. So that’s been good.

Question: Are there any other stories or anecdotes you can think of?

Bev: Oh, I’m trying to think. We did a lot of really serious HAZMAT training in the first days. And it was just really, really interesting, the whole thing, and they gave us a series of books that I took to my school. It may have been called “The ABCs of Radiation,” but, then you got interesting things through the years. I have the movie Thirty Seconds That Shook the World that I’ve shown to classes lots of times. It shows actual footage of Einstein, Marie Curie, and Teller; all these people who were involved. And how they actually had to have Einstein go to President Roosevelt to talk to him to get him concerned enough to fund the program.

We had a guy who was a protester at the Test Site that came, which was really interesting, to get that perspective; a very nice person and very concerned. There were a lot of different topics like that that were very interesting. Then the different tours we took when we went to Nevada, to go out to the Test Site and to Yucca Mountain and toured some of the other
labs. I think we went to part of the Air Force base that’s closer to Las Vegas, Nellis. We went to
something on the Nellis Air Force Base once. The first time I ever saw a GPS, a global
positioning system was at Brian Head. First time I’d ever heard of such a thing, and showed how
they got it working from three satellites to actually pinpoint it, just the beginning of that kind of
development. Some of the other things that I’d seen first, like when we went to that Nellis Air
Force was a copy machine. It may have been because, when I started teaching, it was the old
purple mimeograph that we did by hand.

And, getting to know people. We always had a dinner that we went out to in Las Vegas, and
when we had the wintertime dinner it was at a supper club out clear on the way to Boulder Dam.
I can’t remember what it was called, but we went there two or three years or more. That was the
main thing, to get together there, because in Las Vegas everyone did their own thing. I guess
that was really why the other barbeques seemed a little bit closer, just to have all to a picnic
ground, kind of a Dutch oven kind of thing. Everybody just kind of sitting around at picnic
tables and visiting and stuff. I don’t know why it should seem different. We got rained on lots
of times.

About six or seven years ago, when Christy, my daughter, was here with me, she had
hiked to the top of a ski slope up here, which I’ve done several times. She said that there was a
path that came onto the one where we’d hiked up the other direction sometimes, that you could
just go across and come down that path. Well, she didn’t want to go again and it was after five
o’clock, so I said I was going to go for a walk. I think it was on the day of the barbeque, and I
think that was probably the first time they had the barbeque here at the hotel. So, I hiked up
there and went to the little road over on the other side and went down and started walking on that
road, and went and went and went and went and went. Finally, I decided I was probably going to have to go down to Parowan and call her. I didn’t want to turn around and go back up the hill.

Finally, hours later, I came out on the main road, and if you go back down toward Parowan, there’s a place where it says “Dry Lakes,” and it just amazes me, and that’s where I came out on the highway and started walking up here. It’s the only time in my life I’ve ever thumbed a ride. Somebody came along. There was no way I wanted to hike back up to the hotel. I don’t know how many hours I was gone.

Question: I’m surprised they weren’t out looking for you.

Bev: Well, I was surprised too, and Christy hadn’t raised any alarm. I didn’t get back until after the barbeque was all over. She was just kind of wondering but she hadn’t talked to anybody. I kept thinking there was a good little road that I was on that’d have to end up somewhere and I thought probably down in Parowan. I really thought I was going to hike down the whole mountain. I could not believe how long it was. I think I saw a map there and I’m still just amazed when I see where that road comes out, because it’s way down the mountain. And I was tired. Didn’t have any water or anything like that. I wasn’t smart enough to have carried any. I thought I was going to go all night.

Question: Had night fallen?

Bev: Not quite. I think it was still just kind of dusk by the time I got back and in the middle of the summer it stays light for a long time, fortunately, so. Even if night had fallen, no one
would’ve known where to look for me, so it didn’t make much difference. You sit down and rest for a little while and think, well, they’re not going to find you either. So I kept walking and I was so glad to find that road and so glad when some one came by. It was a utility worker, I think, that picked me up and he wasn’t supposed to pick up anyone but I’m sure he saw this poor old bedraggled woman walking and had pity on me. It was kind of an adventure. I’ll never forget it.

Anyway, it’s been one of the most interesting things in my life, to have been in this program. I have met such fascinating people. When we talk about people like Bob Taft, and to know Gary Sandquist, Nate and Herb, and to have met Nick Aquilina who is a fascinating man. He was so interesting when he talked about all these things, and had done so many things, and it’s interesting to know the things that are going on at the Test Site now. We used to have people who would come from different places like Sandia and from Savannah River. Nick Aquilina said that possibly having the Test Site and being test-ready prevented nuclear war, which is altogether possible. And Nate Cooper always reminded me of James Coburn.

The most interesting thing for me has been all the workshops that I’ve been to and getting to know the people and, you see people every year. One time my daughter-in-law was driving back with her little boy, driving from Cedar City back to Delta and her car broke down in Milford. It was on a Sunday, a holiday, something or other, but there was nothing open in Milford. She called to see if there was some way we could bring a tire down. I guess a tire had blown. And, I called Dale Jensen and he went up to check on her and make sure she was all right and invited her to his house. She stayed in the park where she was but it was nice to have somebody that I knew and could depend on, so it’s just like having a net of people. I think it’s been a wonderful experience. I really think it’s been one of my highlights of my life.
Ely, NV

Station Established: January 22, 1982
Removed: 1995
Reestablished 2003
Current Status: Active

Current Managers: Melanie Darby
Larry Martin

Former Managers: Floyd O. Ricketts
Louis Papez
Rebecca S. Murdock
Gloria Ann Mullen

Ely was one of the original communities chosen for monitoring in 1981. It was also one of the stations removed in the mid ‘90s due to cutbacks in the Community Monitoring Program. DOE decided to re-instate the station in 2003. The old station was located on High School property. Placement options were considered for the new station and an area next to the BLM office in the northwest part of town was chosen.

DRI and EPA had a long history of interaction with the people in Ely and found them, according to one field monitor, very accepting and cooperative. Many state and federal employees have enjoyed the color-coded rooms of the Bristle Cone Motel. In fact, relations with the owner continue to be so cordial, when the re-born station was installed, the owner allowed DRI to store equipment in his yard.
The tasks required for maintaining a station at Ely are legendary with the field monitors. The weather in Ely tends to be extreme. One monitor tells a story of a minus eight-degree temperature in the morning and a sixty-degree temperature that same afternoon, and this was March. Another monitor’s truck blew off the road on the way to Ely one icy, windy day.

Despite the weather challenges, the people of Ely have always been helpful and supportive of the monitors. The station installed in 2003 was not so much a new addition, as the return of an old friend.
Goldfield, NV

Station Established: January 20, 1982
Current Status: Active

Current Managers: Rita Gillum
Jon Skullestad

Former Managers: Myron A. Johnson
Charlotte Diane Shimp
Christine D. Tatum

Jon Skullestad – Station Manager since 2000

Question: When did you first become aware of the CEMP program?

Jon: It was back in August of 1993. I was living in Newark, California at the time and my brother had invited me to Las Vegas. I’d never been to Las Vegas. And, he asked me if I wanted to drive down to Las Vegas. And I said, “Sure.” So as we were going down, we stopped in Boron, California. We stopped at the Twenty Mule Team Museum. And we were talking about the mules that would bring the boron, from the mine out to wherever it was they were taking it. I can’t remember where it was. Anyway, to make a long story short, conversation came around to the Test Site. With the radiation, that they were using the boron to clean off the radioactive material. Somehow it neutralizes it.

The curator at the museum mentioned these monitoring stations that were around the Test Site, so that they could keep track of the radiation levels from the Test Site from the bombs of the ’50s. She didn’t mention anything about what they were currently doing. That was the first time I heard about it and I didn’t realize that I would actually be involved with it.
Question: Did you have any opinion of it at that point?

Jon: I thought, “Well gee, it must be really terrible if they have to monitor it.” I thought, “It must be really dangerous.”

Question: How did you actually come to be the station manager?

Jon: The manager, that’s right. Allan Price was the guy who did this before me. He was leaving and turned to me and said, “Hey, would you like to do this?”

Question: Was he a teacher?

Jon: No. He was a dispatcher at the Esmeralda County sheriff’s office, the same thing I do except he worked the swing shift and I worked graveyard. I was happy that he was leaving because then I got to move to the swing shift. He said to me, “Are you interested in doing this monitoring thing?” And I asked him, “Well, what does it pay?” And he said, “Well, I get a hundred and fifty bucks a month.” I said, “What do I have to do?” He said, “You change filters and take readings.” And I said, “Well, this sounds like easy money.” That’s how I got to be the monitor.

Marg Herndon came out with this big burly guy to interview me, Russ Cullison. They interviewed me. I guess they liked my personality and they said, “Okay, you’re hired.” “Lynn Karr is going to show you how to do this work.”
Question: What made you want to be involved?

Jon: Not just the money. At first it was the money. But, then I became very deeply interested in the radiation. I was fascinated to hear you got these little alpha beta particles, and how they affect you. I have spent already, probably a couple of hundred dollars on videos and – and material concerning radiation. I was interested in radioactive half-lives, how things break down over time.

Question: What do you think the program brings to your community?

Jon: Well, it brought us some Geiger counters. You mean like if I see a high level reading, I’m going to run around the town with a bell?

Question: Something like that, yes.

Jon: Yes. I think it brings a certain sense of security to the community, to the town because people know it’s there and they figure, “Well, you know, if something happens we’ll know that we’re going to be in trouble, so we have to do something.”

Question: How many people live in Goldfield?

Jon: About 180.
Question: Have they demonstrated any interest in the program? When you’re at the station working on it, do people come up and ask you questions?

Jon: No. Whenever I go there, no one has ever shown up.

Question: Were there any community meetings in Goldfield?

Jon: There wasn’t any talk of it. All that happened was that, I guess, there are certain areas outside of Goldfield that are fenced off with chain link fences that were put up in the ’50s because of nuclear fallout, and they were hot spots. They put a chain link fence around it and of course now the only thing left is the posts. Whether they’re still hot or not, I don’t know.

Question: How do you think the station and monitoring is viewed by the community? Have you had any feedback?

Jon: No.

Question: So, the station had been there when you came on?

Jon: Yes.

Question: Why do you think your community was chosen for monitoring?

Jon: Because it’s pretty damn close to the Test Site.
Question: Has the station always been in the same place in community, to the best of your knowledge?

Jon: Yes, I believe that’s where it’s always been. It’s at the Goldfield Public Library.

Question: How has having a station in your town changed the way people perceive nuclear testing?

Jon: The people of Goldfield are pretty quiet about stuff like that. They don’t talk about much of anything. It’s a pretty quiet little town.

Question: Has anyone ever asked that the station be removed?

Jon: No.

Question: How has having the monitor be someone from the community made a difference in the effectiveness of the program?

Jon: Are you saying that outside influence would be a negative approach? That some people would be unsure or paranoid that some guy came in wearing a black suit or something? Yes. I think it’s a good move to get somebody involved that actually lives in town, because it’s such a small town, everybody knows that you work there.
Question: How have changes in the stewardship of the program affected you?

Jon: Hasn’t really.

Question: Do you have any stories you would like to share with me about the program?

Jon: Haven’t I given you enough anecdotes already?

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Marg Herndon’s Goldfield story: Goldfield was quite popular in 1998 with the movie episode and then the rocket crash. DOE was conducting rocket testing and one of the rockets that took off from the NTS developed a problem and crash landed just northwest of Goldfield. The people in Goldfield knew the rocket had gone down but they didn’t know if there was anything radioactive associated with the rocket. They became very concerned and called us. EPA was still involved in the monitoring program and was collecting the data. EPA looked at this station and its readings during the approximate time the rocket had gone down. We called the Western Regional Climate Center on our Reno campus and they were able to give us the wind speed and direction for that particular time of day. Unfortunately, in those days, all the data...
from the PICs were going through satellite transmission to Los Alamos but there were back-up tapes operating at the stations. This station had gone down about half an hour after the rocket crashed but we did have a reading at the crash time. It was easily determined that the wind was blowing away from Goldfield and we were able to show the Goldfield people that everything was okay.
So, Goldfield was kind of in the limelight a few times.
Henderson, NV

Station Established: 1996
Current Status: Active

Current Managers: Gerald F. Hein
Michael Herndon

Former Managers: Ronald Meek
Daniel J. Donnelly

Gerald Hein – Station Manager since 1999

Question: When did you first become aware of the community environmental monitoring program?

Gerald: Oh, 1998, ’99, something like that. So, then I got involved with the college. It’s just kind of fun and I enjoyed it.

Question: When were you recruited to be the station manager?

Gerald: First of all, Ron Meek was the guy there and he needed a backup, but at that time they only had one person. So, I did this on the side. Russ Cullison talked to Ron and apparently because I was doing it for him, I’d do it too because I worked for the college. I was working in security over there so I could do that. So then they found out that I was doing it on the side and Russ kind of told Ron, “He can’t do it because he’s not under contract with DRI,” so we kind of chucked it. Eventually, they were going to come out, about three years ago, I think, with two station managers. Then I immediately, you know, I sent my resume to Russ and everything, so I was immediately hired, and he came out to the college one day and signed all the forms and everything. That’s it.
And I’ve enjoyed it, really. It’s been a lot of fun and I’ve met a lot of people and you understand why they’re doing all this testing. Before it’s just, “Ah, OK,” but then you find out when I went up to Brian Head really what this does. I found it very interesting.

Question: What was your opinion of the program before you actually became the station manager?

Gerald: I really didn’t understand it that much until my first year up in Brian Head and then I said Geez, this is really educational. I started getting more acclimated to it and I found it very interesting. Every year you learn new things. People stop me at the station and I talk to them about the program. They ask, “What does this do?” and I explain to them. “Really?” And give them a pamphlet, so I kind of use that as the goal. I show them what I do, and I show them everything and they’re really impressed with it. A lot of people need to get more involved with the environment.

Question: What do you think the program brings to the community of Henderson?

Gerald: I think people are starting to get involved now because all of a sudden now the Yucca Mountain thing is exploding and I think people are becoming concerned with this. And I think every year people are getting more involved with the environment, which is good. As far as the station, it’s a good learning tool on a college campus.

Question: What was your profession before you retired?
Gerald: I was an accountant in California. And after you become 50 years old it’s hard to find a job. The company closed, so I tried for about a year to get a job. So I went back to school and got (in California you have to) a license to do taxes.

Question: How do you think the station and monitoring is viewed by the community?

Gerald: I think people are starting to get really involved with it now, you know. I think now it’s become known and people are asking questions. Because you know what? When I first started, people weren’t concerned about it. Now I think people are starting to get involved, and there’s students there that ask, which is nice. How can you get information out to the public? The community college is a perfect place to do it because I’m going to talk to somebody, they’re going to talk to somebody else, and it’s going to go on.

Question: Why do you think Henderson was chosen for one of the stations?

Gerald: I think it was a new area and they wanted to do something, and I know Ron Meek really worked to get that out there.

Question: Do you think having the station at the college has changed how people might perceive testing?
Gerald: Yes, I think so, because, it’s not an isolated area. It’s in a big area and in a community college. You’re going to get teenagers, you’ll get adults, they’re going to the community college, so you’re not getting just the kids or the young adults; you’re getting older adults, because they come and take classes.

Question: Has anyone asked that the station be removed from that spot? Has it always been there?

Gerald: It’s always been there.

Question: How has having the monitor be someone from the community made a difference in the effectiveness of the program?

Gerald: I guess you get out of the community what you put into it, and I think picking somebody from the community, because it’s their community, makes sense. You get to know people there too; they see your face constantly.

Question: Do you think there are any trust or credibility issues that go with having people from the communities involved?

Gerald: Yes, I think so. If you have somebody different from a different community, I don’t know if they’d really care. If you’re from that community, you want to do a good job. It’s a job
to me but I still feel you have something to go for to go beyond that. I’ve always been doing that.

Question: You’ve been to a couple of the training sessions at Brian Head? What did you think of the training?

Gerald: Oh, excellent. I’ve enjoyed every bit of it, too. I go up there every year and I learn something different. I was amazed that first year. I went up there and I thought I knew everything and I didn’t know anything. But, every year, I guess you get out of it what you put into it. When I go up there it’s really a training session.

Question: Did changes in the stewardship of the program affect you?

Gerald: No, I think the only thing is you just put a different name on there and that’s it. Before DRI took it over, you could see it coming, the conflict. I respected both sides and I didn’t know enough about it at that time and I didn’t want to get involved with the politics. I stayed away from it.

Question: Do you have any stories about the program that you’d like to share?

Gerald: Not really, no. I enjoy it. I don’t go into it as just a job. I look at it as I’m going to learn something different.
Ken McFate – Station Manager since 1996

Question: When did you first become aware of the CEMP program?

Ken: It was 23 years ago when I came to work here. There was a teacher here that was a science teacher, that was running the program, Jim Hopkin.

Question: How did you become involved?

Ken: At first I saw the station out in front of the school. There was different equipment out there at that time.

Question: Testing was ongoing then?

Ken: Yes.

Question: Was that a concern for your community?
Ken: I think so, because we’re pretty close to the test site.

Question: What was your opinion of the program before your involvement?

Ken: I was just impressed with all this technical machinery they had out there and testing equipment that was there. They seemed like they tested everything. Same kind of thing only in multiple different ways.

Question: When did you actually become involved with the program?

Ken: About nine years or so, in 1995. When Jim retired, he recommended me.

Question: What made you want to be involved with the program?

Ken: I think it was just interest in nuclear medicine, first of all, and nuclear activity and the kind of mystique at the test site. It was a combination of a lot of things, but, basically, it was my own interest in that, following up from WWII and history, hearing about the downwinders of Utah. Being this close to the community, knowing a lot of people that worked out there and, of course, safety concerns.

Question: You are a teacher?
Ken: I teach elementary fifth grade right now.

Question: Do you ever use the station in your teaching?

Ken: Every year I have. When I taught third grade on up, we did weather monitoring. It was a bit archaic then. It had a lot of hands-on, reading the dials ourselves. I’ve had the kids help change out filters, and things like that. Just this past week, I had a couple of kids come by and we went through the PIC and looked at all the different readouts that were on there. One of them copied down the website. I explained to them what everything was.

Question: Do they ever ask any interesting questions?

Ken: I think the most common ones are probably that they want to know if the air is safe. What’s radiation? Things like that, pretty basic from the kids. I’ve had some high school kids that have done science projects on it. We put them in the Clark County Science Fair. They used the website materials, written materials provided by me, and some by DRI, along with their teachers’ input.

Question: What do you think the program brings to your community?

Ken: I think it satisfies curiosity of what’s going on out there and what does it measure and also, a sense of safety, security that they know it’s testing constantly, continuously, that it registers and picks up things that may change in the environment.
Question: You became Station Manager after Chernobyl?

Ken: Yes.

Question: Was there any discussion of that at any point?

Ken: We have a teacher who’s from Russia. Of course, she knew about it and has asked questions about the program. There’ve been comparisons done in high school and middle school classes about it.

Question: No discussion about seeing the spike on the station?

Ken: No. What did come up with a short spike is when they put granite gravel around the site. That raised the background a little bit. That was the only time.

Question: Do you think your profession affects how your view the monitoring?

Ken: I think so. I’m not tied with any of the other acronyms that are out there as far as DOE, etc.. I’m independent of all that and that is a big factor. In general, people just expect a teacher to be impartial, an educating, teaching kind of tool. Getting both sides. So, I think it’s a definite advantage, yes.
Question: How have people in the community demonstrated an interest in the program.

Ken: Asking for the website, taking home the pamphlets, a couple of questions have come up over the years from the town board, but not a lot. They all just call the school and want to know what that is out there. The questions have been directed either to Vicky or me.

Question: When did Vicky become a Station Manager as well?

Ken: About 4 years ago.

Question: Has the station always been in the same place?

Ken: It has, yes, at the school, by the main street in front of the school.

Question: How big is Indian Springs’ population?

Ken: 1,700 to 1,800.

Question: Has that been pretty consistent over the years?

Ken: Since the base closed down and since the Test Site has downsized. No, we were up over probably 2,200 to 2,300. We had a huge acreage here of base housing and a lot of craft workers from the Test Site lived in the community, which isn’t the case anymore.
Question: Underground testing was ongoing when you moved there? Were you there for either the 1970 Baneberry venting or the 1986 Mighty Oak venting?

Ken: I remember the one that vented out the side of the mountain. I knew some guys that lived here and some previous students that I had who were in the area when it happened. So, there was some concern.

Question: Why do you think your community was chosen for monitoring?

Ken: I think just the location of being the last little town before the Test Site.

Question: Do you think having the station in your town has changed the way people perceive nuclear testing?

Ken: I think in some ways, for the people who ask about it. I think they have, of course, a curiosity about it and want to know. It does inform them. I think by working with the kids and what I have talked about with them and what they take home with them, a lot of it becomes table talk at home and maybe there’s some sense of security translated that way.

It helps. I know a lot of parents have talked about it to me. Their kids are coming home talking about the air monitoring, or the water testing. And, we’ve talked about it either at conferences or on the street. It has made an impact.
Question: Do you think you’re educating the parents through the children or do you think, because a lot of them are Test Site workers, they already are pretty much up on this subject?

Ken: Well, I think maybe it used to be the case when we had a large number of Test Site workers and a large number of military who were familiar with the Test Site. I think, the kids just come home and it becomes a conversation topic. I also think in the past decade or so, it’s changed to the point of the kids taking information home. There aren’t that many Test Site workers here in Indian Springs anymore.

Question: Was any other kind of testing done in your community, water or milk?

Ken: Yes, water testing is done.

Question: How involved does the community get in the monitoring?

Ken: Oh, on a scale of one to ten, probably, a five maybe. I think they’re aware that it’s there because it’s in front of the school and if they drive by the school, they know it’s there.

Question: Has anyone ever asked that the station be removed?

Ken: No.
Question: How has having the monitor be someone from the community made a difference in the effectiveness of the program?

Ken: I think when they see someone there, it’s accessible. They see familiarity and get a comfort level with that.

Question: Have changes in the stewardship of the program affected you?

Ken: I saw the new change come in, probably, at our summer conferences. I noticed that the change of staff was a big thing when we switched over. There was a lot of discussion about that. People wanted to stay with the old way. They had those people putting things together. I’ve been to a couple of the recent ones. Immediately after we changed over, the classes just seemed different. We had some quality people there, but I can’t speak to the last couple of years. I know a lot of the old timers were comfortable with Jack Heppler.

We always seemed to have scenario situations in the class that were really worthwhile. I guess you could sit through a three hour lecture, but when you’re out there involved and you’re working it and you’re discussing it, you’re hands-on. It was just a higher level experience, especially for me.

Question: What do you think is the value of getting together with the other Station Managers and meeting people and getting to know them?
Ken: Well, I think it helps to know that you’re all connected other than on a web site. There’s a personal touch to it. Having that rapport with other managers, if you’re having problems with this or we have successes with this, you can share those kind of things.

Question: What do you think the most important thing is that you’ve taken away from the training?

Ken: My general knowledge about nuclear science, as far as the station and the machines and what they do. What happens to all the data and how it’s used and presented in reports from Indian Springs all the way to Washington, D. C.

Question: Did you attend public meetings in Indian Springs before or after you became a Station Manager?

Ken: I remember being to a couple and it was around the time of the venting.

Question: So, there was a lot of interest?

Ken: I kind of remember a tunnel accident because, yes, there were quite a few people there. One time we had someone stay here for a short while. She interviewed people and came to town board and had a chance to go around and talk to people in Indian Springs and, I think that the big issue then was the transportation of radiated materials to storage. That’s been since I’ve come
on, so in the last eight to ten years. It’s been within that time period. They have used the results as a reference.

Question: Do you remember what agency they were from?

Ken: I don’t recall. I know she went to a lot of small communities that were surrounding the test site.

Question: Is there anything else you’d like to add about the program?

Ken: I’d like to express the concern and it’s value to the community, to the state, to the Test Site and the nation as a whole. Keeping the program going and adequate funding to keep all the sites up and running. It is a valuable and a great teaching tool. Now we have all the weather related things that we can use in the elementary school building or the high school. High school teachers can use it, too. It’s really valuable that way. I think it provides a sense of comfort that it’s here to let people know that you’re getting radiation everyday. This is a teaching tool and is a necessary way to explain that radiation is not a big scary thing out there, like it is sometimes portrayed to be.
**Las Vegas, NV**

Station Established: October 19, 1981  
Current Status: Active

Current Managers: Don M. Curry  
David J. Pelz

Former Managers: Dr. Hiram Hunt  
Roy P. Reeder  
Larry Hawthorne  
Marianne R. Tortorici

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**Don Curry – Station Manager since 1992**

Question: How did you hear about the program?

Don: I spent most of my life in California. I retired as a high school principal after about 8 years and moved to Vegas. I always wanted to live in the desert, probably because I’m a biologist, academically at least. I had some friends here, so I moved to Vegas. Did not plan to go back into teaching or anything. I got bored really fast. Wasn’t a whole lot to do and I really missed education. So I went to the school system, interviewed and went through the whole process. At that point, they said, we have a policy that even though you were an administrator in California, our school board likes for you to be in our system one or two years, at the teaching or counseling level. Then we’ll find a spot for you some place. So I thought that would be good. By the time that I went back into the classroom after being gone 15 years, it was so much fun, I could hardly stand it. Seriously. At the end of that first year, even though I was on the list, I actually took my name off. It was due to a lot of things. At the same time all of this was happening, I met a guy who was teaching chemistry at Valley High School, Roy Reeder. He was the early CEMP guy. Since I taught there in the department with him, just by casual conversation he started telling me...
about this program. He was the station guy. At that time, the station was in front of the EPA building. So, I came over with him a few times and looked at it and so forth. After the first year, which I guess for me must have started in 1992, the ’92, ’93 school year, he had decided to move to the opening of a new school out on the west side, Durango. He didn’t really relish the idea of driving over here. I live right down the street more or less. So, he brought me over to talk to Nate Cooper. Nate overwhelmed me with all of his tales.

I really liked him. And, I ended up over time just saying, yes, I would do this. He had me work with Roy for a while. I guess the very first summer, we went to Brian Head and I met all the other people. At that point, EPA was doing the monitoring. DRI was involved and DOE, so that’s how and when I got started with this program. I had looked at it during ’91 and ’92 with Roy and I was really fascinated because I had lived in the west, California. I knew some things about the Test Site and the testing programs because I grew up with it. This fascinated me because nowhere had I ever run across the monitoring program. I had always read of all sorts of things going on with the politics at the Test Site but nothing about monitoring. And yet, being a biology and chemistry major, I was always very interested in radiation and all the attendant things. I had done some graduate work at Creighton University for a couple of years. Finished out my masters and worked at the V.A. Hospital. They had their own little unit where they cranked out all their radionuclides. After I finished that back in the 60’s, ’67 or ‘68, I went back to California as a teacher and continued to use all sorts of radionuclides in my biology classes and chemistry classes that I obtained from the V. A. Hospital, the people that I had met and worked with there. That gave me kind of an inside track. I was one of the very few people in that part of California doing that sort of thing. Also, I could see a lot of response from kids. So, that gives you an indication of where my interest came from in this whole program.
After Roy left, I took over the station management and became really involved with a number of EPA people. As this progressed for a couple of years until about ‘94, ‘95, I got a grant from a group in Cambridge, Massachusetts, that allowed me to create a program in which students produce a newsletter. It was a global environmental studies project that was designed to be worldwide. The group in Cambridge got a National Science Foundation (NSF) grant to do this. It was a five year project. I was one of the first people in it. Not a lot of money involved, five or six hundred dollars plus some computer equipment so I could connect globally with some people. And they had worked with different people. That’s how I met the people in Milan initially, through this global studies project. There were also people in Russia and Poland. That really fascinated me because most of our kids have a very narrow focus of everything that’s going on.

I wanted to give you a copy of this. This is the newsletter that my class publishes, the Silverado High School Global Lab Journal. We did a major article on the new facility here at the Atomic Testing Museum. I took a photo of it as a backdrop against the monitoring station out here. I had the kids up to see it. They come up and ask about the station. We did a total article about that and we send this out to about 500 sites around the world.
I can’t find any other high school science program that publishes their own newsletter like we’re doing. We invite a network of participants to submit an article, students, teachers, science related people and have featured the CEMP several times.

So, with my interest in that and a grant from Cambridge, I began to set up this program to look at the politics of radiation, nuclear testing, etc., on a global basis. I saw a lot of interest in the kids with this. They were interested in other people, other countries, and other states even in our own country, but really also interested in whether they were getting correct information. So, this program fascinated them a little bit in that it was like a third party watch dog outside the government circle.

That was always interesting to them that, “Oh, you mean, the government would not tell us the whole story about this?” My response was “Let’s find out and I’ll help you find out for yourself.” All the way to the downwinders, it opened up a really interesting vista for them of how things are woven together in the real world. When the bell rings, they get up and go to another place and it’s totally different and totally unrelated to what they just came from and that’s really not the way the world works. This program gave me an opportunity to be connected not only to people at DRI here but EPA and DOE and the summer workshop meetings that we had. It really put me in touch with a lot of different people who I could use as resources. So I approached the program ultimately from a really selfish vantage point because it opened so many doors for me. I can’t tell you how many times I’ve had people from DRI speak to my students, people from EPA; I still use four or five people from EPA. Out of that original involvement grew a partnership with EPA in which we developed a radon assessment project. And that is still intact today. Each time I have a new group of students come in, you know, we go to the radon
lab and I show them how to use all the equipment and EPA provided me with charcoal canisters and everything to check radon.

It’s something to think about, as it also enables kids to focus on data collection and investigating an issue that is controversial. In many ways, it parallels nuclear testing because that’s a very controversial issue. The whole issue of Yucca Mountain which is going on. Kids begin to see that, in so many real life issues, there are no hard core answers, that there are different viewpoints and pros and cons. It’s a little more fluid than they like to think it is because, for so many of them, if it’s 47.326 then it’s 47.326 and they’ve been taught that. So, they’ve been brainwashed a little bit along the way.

This program really fits philosophically how I think students in high school should be taught. That is, you’re in a kind of a make believe situation down here at this school and you need to see how the world really does work and you need opportunities to become involved while you’re in high school with community people and see what they do. They get up every day and go to work. Some of the students are looking every single day at how we assess air quality. And if we know what some of the data might look like, then how do we massage that a little bit? Can we make it better? We’re all living here. For me, that covers a lot of what CEMP has done and has allowed me to do, and at the same time, involving some really good students. I’ve had five who got jobs with DRI.

Plus one of the students, who was my first in the first group of my global studies class, works in the lab and he’s already finished his masters. He is now hiring one of my last year’s graduates, who is going to UNR and will work part-time while he’s going to UNR. And, about two years ago, I had a junior student, Paul Olla, that lived with these people and worked at DRI for the summer and then came back here and finished up at UNLV.
Those things have really worked out to the benefit of an awful lot of kids. How I see the program affecting me is that I’ve been able to be a much better educator, being able to draw on the resources that are here. I’ve never used DOE people very much. They’re harder to use and deal with. Although, it’s fair to say, over the last couple of years, I have involved a number of them from Yucca Mountain who come in all the way to Las Vegas. One example is Kurt Rautenstrauch, who does all the endangered species and wildlife on the Test Site. He brings two or three U-hauls filled with stuffed animals, coyotes and bobcats and pushes them all over the classroom. Just fascinates the kids because they see no connection between wildlife and the Test Site. Then they test things. Everything is already dead long ago. It opens their eyes a little bit. So it has been really beneficial to bring these sorts of people in that really help students see this weaving together of a lot of different careers and professions to make it all work.

Question: What do you think about the placement of the station?

Don: In terms of the community itself, over the 10 or 11 years that I’ve been involved with the program, it’s my view this station in Las Vegas has not gotten near the hits, if we want to use that modern day term, that some stations have because you have to be right there at that spot.

When the station was on the campus at UNLV, there were occasions, going up to check the station, I would sometimes be there recording data and students would stop. And, they’d say, “you know, I pass this every day, what do you do here?” So, it gave me an opportunity to talk to them a little bit about it. Even though some of that was explained with the signs that were there, college students don’t necessarily read, so you don’t really know whether they got the grasp of that or not.
While it’s been located here (at DRI), I’d say a couple of dozen times someone from out of town pulled in to see what DRI was about. What is this facility? I would be here and they would ask what does this thing do out here. But most of the time, I guess the most fascinating conversations I’ve had were with Metro because I’d come up here at six o’clock on Sunday mornings a lot of times. I look suspicious anyway, probably. A couple of times, two officers in a black and white would just pull up and sit there and look at me. Well, I’m far too old to be intimidated by most anything, so I’d just walk over to the car and say, “what do you guys want?” They said, “we were sitting here talking about what you’re doing.” I’d say, “well, get out and come over here and look and I’ll show you.” And they were really fascinated. I can remember a couple of guys who had lived here all their lives and they said they never heard about this program. I said, “well, I don’t know, I can’t understand that totally. You know about the Test Site?” They grew up hearing about the test site but, had never heard about the monitoring program.

So it was good. They were really fascinated. I spent probably an hour with a couple of guys one morning going through all the different connections, what we did with the data, and all of that kind of stuff. I felt better after they asked. I seem to think since most days that I stop in here I never run into anybody, that there are very few that actually tune into what that station is all about. I think that will change when we open this new facility.

The Atomic Testing Museum is going to be a tourist draw. So there’s going to be a lot of people from both the local community and out of state that come to see this. I think we’ll have questions about the station and what we’re doing. And I think that will be a very positive thing. Every now and then, the government spin really rears its head and this is certainly the antidote.
I think there is that air of suspicion, that they make decisions and then they set the spin in motion here among the media. A little bit here, a little bit there, so that sooner or later their particular position gets out there to the public. And that’s not anything new to me. I see that as a part of politics probably. There are a lot of things that the general public doesn’t need to know all the details about, I’m sure.

I see this program as part of a flip side of that issue. There are some people that over the years have been looking at DOE and have been watching what the government tells us about this or that particular test. I think that the program, since it involves primarily teachers, creates an opportunity for a lot of young people to have some understanding of how this all works. We reach a lot of kids. And, those kids have a lot of contacts. So if you really educate young people, they have opportunities to comment on certain things, and even if they don’t get it all right, at least they understand the basic concept of what this was meant to be and do. So, I see that as a real benefit. And I guess that’s one of the main reasons I’m willing to be involved and stay involved. Sometimes, it’s a little bit inconvenient to try to cover the station. People at DRI and the people at EPA were all so very, very accommodating about providing support.

Question: Have you been affected by changes in the stewardship of the program?

Don: I saw no problem at all going in at DRI. You know, I’m partial to DRI in a lot of ways because, for me, it’s an educational facility that has such great value in our state. I always think about this state as being right on the frontier. I lived in California for so long, but I grew up on a ranch down in Texas, and decided that was not my cup of tea. So, moving to California and being there during what was viewed as the real progressive years of growth for the state.
Education made a lot of strides, and I was there when California was probably in the top three or four states in the nation leading educational reform.

Then moving to Nevada, where sometimes I feel like this is southern Bangladesh with no rain. It’s really strange. When I moved here, some of the things I just basically took for granted in education, none of these people had ever heard of. And that benefited me in a lot of ways because I ended up being able to get all sorts of attention; rewards, grants, recognition and everything because of it, which worked out for me and mine. But I do view us as kind of being on the frontier. We have people in Carson City that are in their 70’s that have been there since in their 20’s and they still have a certain view of the state that’s not quite as progressive as probably Clark County needs to be for sure.

So putting this monitoring station here, even though we’re on the south end as I call it, we’re not considered a downwinder by any means, since this is the largest part of the state, it behooves us to be a part of this project. The other thing is the groundwater. I helped with the tritium testing. We used to have that tied into our station here, but now we’re doing the groundwater thing, so we’re looking at well water and so forth. I came on board when they were still doing the milk testing, and that was always interesting since I had grown up on a ranch. We had a milking herd.

I always felt really close to all of that, because of the ranches along the downwind side. I was interested to know. Anything going on up there with these people? Do we see a blip with the data anywhere? I guess that’s one of the reasons that I try to make every effort to always be at the Brian Head workshops. I always get so much information updated.

Question: So you found that training valuable?
Don: Oh, very much so. I probably have two or three file drawers that are pretty much filled with information that I gathered, research that was spun off of something that occurred there. Bruce (Church) has always done a great job of bringing kind of a different slant to things, I mean, having been right there with all of the early testing. And he’s a recognized authority on a lot of things, radiation physics and so forth. I’ve always appreciated those little down in the corner of the coffee shop conversations that I’ve had with him.

It’s one of the most valuable things that I have ever been involved with because, even at this stage in my career when I probably ought to be thinking about just going into town, I find myself so extremely excited about what’s new, and want them to tell us about it because I have so many people with whom I can share that information, especially students. Also a lot of adults are very interested, and yet quite uninformed about things. You know, over the years, we’ve had two or three different people. Two that I remember distinctly who had spent time at Chernobyl, and that’s always a big deal with kids.

“What if this happens some place else?” They were fascinated to know that we saw some little data blips here from that. So in summary to what the benefits are, there are so many benefits that go far beyond the station. It’s the connections and it’s the total program where somebody, somewhere, is committed to bringing people together to refresh their training a little bit. The last couple of years, we’ve really done a lot of training on the technology, the monitoring devices, things like that. Plus, we’ve had some new people come into different stations. And a lot of those people misinterpreted how to record things, so training’s been really beneficial, but it’s amazing what things surface when you have people who are working at this facility. For instance, on certain things and DOE, most of the station-related people view DOE information with a little skepticism. They’ve always done that. People who come to present.
Mr. X finishes an hour presentation coming from DOE, you get the coffee break and you get the three guys over here in the corner, saying they always shovel this crap out. Excuse me. But you know, that does happen.

Question: That skepticism is expressed a lot?

Don: It is, it is. And I think out of it, comes this, there’s a certain level of confidence that individuals begin to adopt. Oh, let’s see, I know what this guy is saying and that sort of thing. I see that happening a lot. And I think that’s very healthy that people, who supposedly are not in the know because they’re not affiliated directly with a certain agency, come away feeling through this program that they’re really making a contribution in their community or in their school. I see great value in that.

One of the things that has happened at Brian Head two or three different times, we have had the other side invited to speak and they bring a certain viewpoint, and they’re certainly entitled to those. Those are the kinds of things that those of us that are related somehow to this program need to hear. We need to hear that point of view that’s coming directly from a person representing that group rather than the media. You get a little bit of distortion with the media. I think that has been very fairly done. You get all the viewpoints, so you get an opportunity to ask those very pointed questions. I don’t understand why you see it this way or I don’t understand how this works. You get that opportunity at the meeting that we have at Brian Head.

Don: I don’t know if I’ve covered everything. Is there anything I’ve missed?
Question: I think you’ve pretty much answered every one.

Don: Be like my students, “oh, please, Mr. Curry, stop for a while – take a breath, take a breath.”

Question: Are there any other stories about the program or anything else that you’d like to share?

Don: I’m trying to think of a statement I can make to sum up my gut feeling about this whole thing. If you get beyond how beneficial I think it’s been to people and their careers and especially, as I recounted earlier, beneficial to students. I’ve had so many students that have come here and asked questions. I’ve been on all kinds of tours through here. I’m looking specifically at a certain research opportunity or something that the kids were really fascinated with that gives them a much broader view. When you talk about the Test Site, the nuke thing just comes up immediately and so many people feel that’s the whole story. It’s really not the whole story. There’s a Native American, a Paiute man that I’ve had in to class to talk about their connection to the Test Site. You know, he has a license, a certificate, a stamp of approval to go into the Test Site and collect herbs. Especially, I think some of that is on the Yucca Mountain land. And, he can go in there and collect herbs that they use for certain either religious or medicinal ceremonies or purposes. And I guess I’m just continually amazed that even with the Native American influence here in the west, specifically in Nevada, most adults that I know have no concept that that goes on.
Right down the list to Kurt, the guy who does the endangered species thing, studies the wildlife on these pieces of land. We think solely about whether we are going to set off some kind of nuclear device or test something there and that’s what most people see here and think about. All these other aspects about what goes on in all of the agency relationships coming together to study a place is very, very important. And what this program has done for me personally is put me in touch with all of this information. It’s been a highly personalized thing all the way from Nate Cooper, who I’d just call every chance I got. “Nate, I need this” and ask him some things, “can we get a cup of coffee some place?” I can’t tell you how many times he met me some place out here. We’d sit down for an hour or so and just chat about things. He helped give me such a different perspective about this whole business. Marg was really great, too.

You know, I just love Marg and what she brought to the program. There’s so many people like that. I send these newsletters out to the teachers and CEMP list. Some of them, you know, Rick Hardy, and some of these guys called and asked certain things and, I think, Rick, a couple or three years ago, before he went into administration, I think he had some of his kids write some articles for a newsletter or something. People like that. Beverly DeWyze.

People have sent pieces of information to students, you know, and gave them that personal contact. And it’s really, really tough to convey the importance of that to other teachers. So, each year I have a mandate to my kids to write proposals to regional and national science conferences and usually we’re accepted to make two or three presentations to them. And I introduce them. We bring two or three copies of the journal to hand out, a brief overview of what our program is like. And the kids don’t realize it at the time, when they’re telling how important it is for them to be connected to somebody like DRI, they know, because I’ve told
them how many different students we’ve had that worked here, that actually got paid for it, how much input some of these people have in the individual student research. The value of physically coming to a place and visiting with people who are active in research and seeing what contribution they’re making.

An example is the kid that’s going to his first year at UNR and I’ve kept in contact with him by Email. He’s a really bright kid, nice kid. I said, “hey, if you get some time, because college kids don’t go to class hardly anyway, when you’re in town next time, come and talk to my class a little bit about college.” Well, he ended up saying, “yes, I left here, took some of the Advanced Placement courses,” he said, “after being in this program for a couple of years and especially getting to work with the people at EPA and DRI.” He had taken a big role in the radon project and was very much involved in air and water testing. He’d done Lake Mead projects with us. He changed his major to environmental engineering and he doesn’t really know what he wants to do necessarily, but he feels strongly enough about it that he asked me to get him connected to the people and have him go talk to Marg. If he worked at DRI, he might have a better understanding.

So these kids have changed what I feel to be their direction in life primarily because of the opportunities that were afforded to them because I was involved in this program. That’s what it boils down to. When you see major life changes that you perceive to be positive, those are the things you should be looking for in whatever programs exist anywhere. That’s what I think. Within that context, I see this program as extremely valuable to an awful lot of people in our community. Most of those people don’t even know it.
Question: When did you first become aware of the CEMP program?

Dale: I can’t remember the exact date. You probably know the date Milford Station was put in. I’ve been involved with it since the start, and I can’t remember exactly when that was.

Question: Who came out to recruit you for the program?

Dale: Nate came up and talked to the mayor. The mayor made the recommendation. I taught science at the time, and he made the recommendation that I get involved, and so they talked to me and then wanted me to recommend somebody. So I recommended Leon Gay and both of us have been involved since the start.

Dale: We were put in at the same time, with Delta.
Question: When they approached you about it, what were your initial thoughts?

Dale: Well, I’d attended a workshop, a week-long workshop at University of Utah right after I started teaching school on nuclear energy, and so I’ve always been kind of interested in it, and so I was quite interested in the idea after it was explained to us, plus the other educational advantages.

Question: Were you aware of any of the downwind issues before you got involved?

Dale: Because I wasn’t from Utah, I really wasn’t aware of it. I mean, it’s kind of crazy to say, maybe, because it’s such a big issue, but it wasn’t really something I was familiar with. I didn’t know it was an issue. I knew a little bit about the above ground testing and I knew a little bit about the radioactive clouds and stuff that come into Utah, but at that particular time it wasn’t a big issue.

Question: What made you want to be involved with the program?

Dale: Well, like I said, when I found out that it was going to be of an educational benefit to myself and my students, I was real interested in it. Then when I got involved with it, I found out how much the community could benefit from it, and then I became more aware of the transportation issue. At the time I got involved, of course, there was still testing going on.

Question: Yes, underground testing.
Dale: Yes, and so I became much more interested in that aspect of it and how it could help our community.

Question: What do you think the program brings to your community?

Dale: Well, I think it brings just the station being there and people knowing what it is and I think it brings a kind of a calming influence, maybe, to people there. They know radiation’s being monitored in the community and therefore, they don’t have a lot of concern. I’ve always said that as long as they’re not concerned about things, then we’re doing a pretty good job.

Question: You’re a science teacher and have been for 37 years? Have you used the station in your teaching at all?

Dale: Yes. I’m retired at the present time, but when I was involved in the teaching, I used it all the time.

Question: Were there been any interesting questions from the kids?

Dale: I think probably the biggest thing that I gave to the kids was in my physics and chemistry classes, where we were able to get information that I would be able to bring in to that age group. They became much more knowledgeable about the risk involved and those kinds of issues. It seemed that as soon as they started to understand what radiation really was, then they couldn’t
understand what the big issue was all about. I could feel that with my students. I’ve still got the students today that live here and we can still talk about some of those things, where other kids that have no information about radioactivity are the ones that usually end up with the fears, not understanding risk involvement.

Question: Do you think your profession affects how you viewed the monitoring?

Dale: Oh definitely. Yes, definitely.

Question: How did people in the community demonstrate an interest in the program? Did they have any community meetings?

Dale: We had a few community meetings. And they were fairly sparsely attended. Didn’t seem to be a lot of interest. But we were available to answer what questions they did have. After the testing we had one. Ken Giles came down and made a presentation on the deer populations to a sportsmen’s club that we have there, and that was one of the real highlights of the presentations that were made. I think that changed a lot of people’s opinions of what was going on. I can’t think of any other real meeting where there was a large number of public people involved.

Question: How do you think the station and monitoring is viewed by the community in general?

Dale: I think it’s positive. I’ve heard a number of people come by the station and they’ll talk about background radiation. They’ll talk about some of the radiation issues that they’re
concerned with. It usually goes back to this business of the downwind issues. I’ve never had any real positive or real negatives, and so to me that means that what we’re doing is probably a good thing.

Question: Why do you think your community was chosen for monitoring?

Dale: Well, I don’t know for sure, other than the fact that, the story I got, and I think it was from Nate, was that we had a politician by the name of Wayne Owens and I can’t remember the politics. I know he was a representative, a Democrat from Utah, and he was an environmental kind of a person and he took a tour of the Test Site that Nate and the group put on. But anyway, he asked the question, “Well, why don’t we have more stations?” At that time we had a station in Salt Lake City. And he asked the question, “Well, why do we have all of these stations in Nevada and only three stations in Utah?” So I got the idea that his comments maybe stimulated the stations being put into Milford and Delta. It was the same reasoning. They have them all around the Test Site in Nevada but the representative from Utah was asking, “Well, what’s wrong with Utah? If it’s good for the people in Nevada, why isn’t it good the people of Utah?” I mean, here you’ve got a hole, and you do. If you look there’s the Milford and Delta stations filling that hole in that corridor right there. And I’m sure that the political influences of our representative had something to do with it. I’m just relating that to you as I remember it coming from Nate. I’ve always thought that was kind of interesting.

Question: It is interesting.
Dale: How things get done in the federal system, especially with federal money. And this is a man that was definitely helpful to the program, I think.

Question: Has the station always been in the same place it is now, just outside the library?

Dale: Yes, we thought we’d have to move it off the library because it’s running right now one of the highest background radiations of any of the stations. That whole hill used to be a mill for the mines, and they’d bring the granite rock to there and grind it. And, there was a lot of granite rock there in the wall. That background radiation, I think Austin used to be running right up there with us, or a little above us, but they’re similar. So our background was higher and that’s a question that a lot of people, when they look at the data, I’ve had a number of questions about that. So it gives us a chance to spring off into the background radiation coming from sources other than the cosmic sources.

Question: Has it generated concern?

Dale: Not really, any more than just radiation itself because I get a feel for most people, “panic” was just a word.

Question: How has having the station in Milford changed the way people perceive nuclear testing?
Dale: I couldn’t answer that. Because before it was there I didn’t hear anything negative about testing there and afterwards, when they quit testing, I don’t think testing was really an issue.

Question: Was any other kind of testing done, water or milk testing?

Dale: We’ve done water testing, I think this is our third year. And the community is appreciative of that. I’ve had a number of comments from the people that are in charge of the water, and anything that can say our water’s safe is a positive thing for our community.

Question: Were you involved in any of the body counting they did in the early years?

Dale: Yes, my wife and I were involved that. I can’t remember, two or three years. Did the physical.

Question: Was that of concern, or did you just think it was a good thing?

Dale: No. It wasn’t a concern at all.

Question: Has having the monitor be someone from the community made a difference in the effectiveness of the program?

Dale: Over and over again. I get the feeling that most people didn’t trust the government agencies, whether it be EPA or DOE or any other government agency, it just seemed like that
And because we’ve been there for so long, and then I’ve been there for so long now, most of the adult population of our community I’ve taught in school.

Question: Do you think it lends the program credibility?

Dale: Oh, absolutely. I’m sure it does. Because I’ve heard different people express the fact that, “Well, if you say it, we’ll believe you.” I don’t think they would generally. Because that’s just the whole “downwinder syndrome,” I call it, they just don’t believe. People still don’t. If it comes from the federal government about radiation, they don’t believe it. When we had Ken Giles, there was a group there that didn’t believe that all the deer in Utah didn’t die off because of the radioactivity. Even though Ken made a good presentation, because he was from EPA, they aren’t going to believe him.

Question: How have the changes in the stewardship of the program affected you?

Dale: I don’t think it’s affected it much. That station at Milford, I think the way it’s running now with DRI doing the equipment and everything, it probably a little better. But as far as the program itself, I mean, we’re a little closer to the route people than we were before. It’s a little more personal. Maybe because where we now have the DRI, before it was like I was working for DRI and the EPA. EPA would just come around. But now, it seems like we’re all in the same boat together, more or less, and yes, I think in that way it’s better. As far as effectiveness, everything gets done the same as it’s always been done and I don’t see any real difference that way.
Question: Do you have any other stories about the program or experiences you’ve had with people in town that you’d care to share?

Dale: Well, I remember one thing that was right after we got started in the station. It was, I can’t remember if it was the same year or a year later. It was early on, though, but the chemical plant in Henderson blew up. Well, when that chemical thing blew up, it made the Cedar City radio station immediately, and I remember a number of people thinking that it was a radioactive cloud that was coming toward Milford. And I guess this big cloud went up and then it started to drift, and that was one of the experiences that I had a chance to use the program. I mean, a lot of people were calling me because I guess they thought that it was a radioactive cloud and we were going to get it in Milford. And I kept telling them, I said, “No, it’s not a radioactive cloud. If it is, I’ll be the first one to leave. You can follow me.” A lot of them had heard the news before I did. But I knew it wasn’t a radioactive cloud, no matter what. Because, for one thing, we didn’t have any tests scheduled. I knew it didn’t come off the Test Site. They said it came out of Henderson and I said, “Well then, it’s not radioactive.” It has to be a chemical explosion, and then I found out later that it was. That’s how people perceive an accident down in the Las Vegas area.

Question: And you had the knowledge of what was going on?
Dale: Yes, and I knew it wasn’t radioactive. But, then with Chernobyl, when that occurred, people were interested to see if our radiation went up a little bit. There was a slight elevation that they attributed to maybe Chernobyl. There was a lot of interest in the monitoring then.

Question: What do you think of the future of the program?

Dale: I hope it goes in the direction of the transportation, and I hope that we can get ahead of the game with the transportation issue. If we would’ve had this all in place before we started testing, I think there would’ve been a lot less concern that people had. I think we’re in the same position now. When we start transporting radioactive materials across the country, I think there’s going to be an uproar. And one of the reasons for that, being an educator, one of the areas that’s not being covered in the education of our youth, is radioactivity.

There’s one reason for that, I think, because when I first started teaching, the Atomic Energy Commission or some other government agency, DOE maybe, associated with radioactivity were sponsoring teacher training in these areas, and I got involved in that early on in my teaching career. I was funded for a week of training in that area by the government. I think it was DOE that gave the training. Well, what happened was the environmental people or anti-nuclear people started making a big influence, and that was one of the things they attacked, that there was government money being put into education to fund teacher training in the areas of radioactivity.

We got a lot of that in just a general course in physics in college but not to the degree that we got in that week’s workshop. I think what we’ve done is created a situation now where there’s very, very few teachers that really understand. I’ve gone in the classroom a number of
times since I retired, and presented a short lesson to elementary students and also some high school kids. And it’s just not there. So therefore, without the knowledge, I think when they start to transport the stuff there’s going to be an uproar. They’re generally afraid and it’s because of lack of knowledge, because I watched that in my students.

As soon as they understood what radioactivity was all about, basically it’s just this little simple lesson on radioactivity. As soon as they understood it, the fear went away, and that was an entirely different attitude from then on. But there’s so few kids getting that training. It just doesn’t happen. I mean, it was happening in my class, in physics class but there’s no areas where this is a priority to be taught. I don’t know about Nevada, but in Utah it’s not one of the priority items to be taught in the school system. You don’t hear about it in elementary school and you don’t hear about it being taught in junior high school. Because it’s not being taught. And it’s as basic in science to me as the cell theories or Newton’s laws of motion. It’s an important aspect of science that should be taught in schools.

I think somebody has to take the lead and push it, and I don’t know who it’s going to be because the federal government, I think, is hiding because of the “antis” that are out there. Reminds me a little bit of Kansas and teaching the theories of evolution and Darwin. In the state of Kansas now, they’re completely pulling the theories of Darwin out of the whole school system. The transportation issue, I’m sure, is going to bring a lot of these issues out. And I hope this monitoring system will be in a position that we can help that somewhat.
Lynn Karr on Dale Jensen and Leon Gay:  *Dale Jensen and Leon Gay have been running it ever since I’ve been with the program. Leon retired about two years ago from teaching. Dale retired a little earlier than that from teaching. They both still do the station and really stay after it. There is a possibility they were talking about Milford being picked as an intermobile site. So, if they’re bringing radioactive material by rail, they might transfer it to truck at that point and they were looking at keeping our station. The town asked if we could actually put another PIC out some place.*
**Overton, NV**

Station Established: January 16, 1982  
Current Status: Active

Current Managers: Nick J. Bowler  
Jack W. Nelson

Former Managers: Val D. Smith

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**Nick Bowler – Station Manager since 1981**

Question: When did you first become aware of the CEMP program?

Nick: I had moved back to Moapa Valley in 1980, I guess. I grew up here, went to high school here. Then, I taught high school in Vegas for three or four years, lived over there for about seven or eight years. Anyway, after that I came back here and became a science teacher, Val Smith was a science teacher at the high school and he gave me a call one day and just said they were looking for an assistant to help him and this monitoring program and would I be interested? And it paid a little bit of money. Of course, at that time, I was a new teacher and I thought that was great. He got me involved and then Nate Cooper came out and we got signed up. I started helping Val for a while. Later on, Val retired. I became the community monitor. Then we got Jack Nelson’s assistance. It was after I moved back here to the valley and I was a teacher, they wanted school teachers. They wanted science teachers. I taught science, so that’s kind of how I found out about it and got involved.

Question: Were you aware of the program before you became a monitor or was when they approached you the first you had heard of it?
Nick: Yes, that’s the first I had heard of it. Of course, growing up out here, I knew about the Test Site, I knew about testing and things like that but I had no idea they had a radiation monitoring station here. And I didn’t know anything about the program at all. So that was my first introduction. It was just a short time after I moved here that Val talked to me, so that’s how I became aware of it.

Question: What year did you became a monitor?

Nick: It was right around 1980. I remember, my youngest son was just a year old and we went up to the first summer session thing at Cedar Breaks. So it’s been fifteen years, a little over fifteen years.

Question: What was it that made you want to be involved in the program?

Nick: Well, I had always been real curious. As a little kid, we used to get up in the morning when they did the above-ground testing. You could see kind of the flash over the top of the mountains and the hills there. Of course, we knew the testing was going on. A lot of people out here worked at the Test Site. In our valley, too, we’d had some concerns about the testing. As I remembered growing up hearing these stories about different things, the radiation. So, when the opportunity presented itself, I was real curious about it. I’ve been out to the Test Site once on a science tour. So I’d seen some of the things that had been done out there. When this came up, I thought it would be really interesting to get involved in and learn more about. So, when I got asked, I thought sure. And, like I said, I think it paid $50 or something. That helped a little bit, too. I had always enjoyed those kinds of things. So I decided it was a real opportunity to learn some new things.
Question: What do you think the program brings to your community?

Nick: Well, I think the community is like I was. I still don’t know that the community really knows that much about it. I know as we started, as I got involved in this program when I first began, they were still doing the testing. And they were announcing nuclear tests. They were all underground tests. But it was still going on so people were very much aware that tests were going on. They were always in the newspaper. Because they were monitoring that kind of thing for radiation leaks, I think there was a real concern by DOE and others that they wanted to make sure that people felt secure and safe about it. And, I know that the explanation I got on how the program even started, they just felt like they needed something to kind of help boost the public relations of the DOE and everything is about being good neighbors. And this is one of the ideas that they came up with.

It’s an excellent concept just trying to educate because I think ignorance about radiation and those kinds of things is the biggest obstacle they face and dealing with all those kinds of issues. They used to have the town meetings. They would come around and DOE and everyone would come and we’d try to set up a date and advertise and try to get as many in the community to come. They would have speakers and we’d have films and ask questions and answer questions. We held one of those here and it was, like all of them usually were, very poorly attended, not too many showed up, ten or fifteen and they’d ask a few questions. Usually these were people who were kind of ‘anti’ had heard that there were things going on. I think that part of the purpose of it was to try to alleviate some of those kinds of fears. There were never really any issues that came around that really stirred everybody up, at least here in this community.
Then the underground testing stopped and I felt that the program was going to probably
go away because there was really no issue to test radiation. There wasn’t anything going on that
could even cause anything. And then it kept going.

Of course, then the Yucca Mountain project started up and the transportation of this stuff
was going to be an issue. I think they decided that, hey, we’re in place, we’re trained, the system
works and it’s a good program. I think, from DOE’s standpoint, it was a good public relations
tool still to have people out in the community that could talk to others. I still feel like sometimes
I mistrust government. The information that they want to give, they can manipulate any of those
things any way they want to spin it. So, they’d make it sound, and I’d had some concerns and I
can get to some of those later, but all through the history of that, we did quite a bit. I don’t think
they’ve tried to do many of those community meetings in the last several years, at least I haven’t
heard about them trying to come and give presentations. They kind of left it open-ended. If you
wanted to do something, you could. But, they haven’t lately. At that time, they were trying to
go every year to every community and do something.

It’s more voluntary the way I look at or perceive it. They haven’t tried to. And really,
there’s no issue other than when Yucca Mountain comes and they talk about transportation.
Maybe that’ll be the issue. Because there’s got to be some kind of an issue to make people
come. When that comes closer to reality than it is, then I think the system will be in place to
keep going with it. But, at the time we started, that was going on. But, back to your question on
how much is the community really involved in it. Most people didn’t know. At the time, Jarvis,
I don’t know if you remember, I can’t think of his first name, he wrote every week. He would
send a report every month and put it in the newspaper that this is what the community station has
read. He’d kind of give a little spiel. And then, he’d put it in all the local papers and stuff like
that and the people would read that. That kind of helped them be aware that it was even there. And people would talk to me once in a while about it. But like I said, as far as a real interaction, type of thing, not a lot. It’s always kind of been that way.

Most of the people here have accepted the Test Site and the testing and all that for years. So it hasn’t been a real issue as far as real concern. A lot of people thought it was a weather station and now it’s both. A few years ago, they decided, since everybody thinks it’s a weather station, we’ll do that. And that’s helped. But, I mean, it has an Internet site and I use it all the time just to get updates on what’s going on with the weather, how hot it is today. That’s kind of where I’ve seen a big activity, going through the years, it’s just kind of been in the background of the community. When Mr. Jarvis put the newspaper things in and we had a town meeting, it seemed like we did more trying to expose it, I guess, than we do now. Right now, DOE doesn’t seem to be promoting it all that much but I think people are still aware it’s there.

Question: Did teaching science affect how you viewed the monitoring?

Nick: I used the station a few times, when we talked about issues like that, and they were really good and DOE provided some teaching aids and videos. I tried to incorporate some of the things I did. As far as my views of things, yes, I think over time, I’ve began to trust things I heard more and more because I’ve heard the stories about all these different things. I think my view has changed a little bit. I’m not nearly as concerned about some things that a lot of people seem to be but maybe I haven’t been exposed to them as much. I think that’s what it is. It’s mostly just fear of unknown things that most people have. I feel like the training I’ve had and my exposure
to the things that they’re doing and have done has helped me to feel a little more comfortable about everything that’s taken place in my tenure there.

Question: Why do you think this community was chosen for monitoring?

Nick: We weren’t directly in the path of downwind, but we were close to it. There was a lot of things that have occurred here in the valley with different illnesses, plus Bruce Church lived here. I don’t know if that was the major factor, but they took all the small towns. I mean, why Boulder City? Utah, particularly, was downwind and they were the big issue, St. George and Delta. You could see that direction where it all went. But, then they went each side of that. Because we are in close proximity, we have a lot of Test Site people who have worked there in the past. I’m sure it was just logical because we were an agricultural community at the time. I know they’ve taken milk samples for years here. We had a lot of dairy herds. Of course, that was an issue; what the cows were eating. I think the valley’s had a really high percentage of lupus, which is a blood disorder. My brother died of that; a lot of people. So many got it at the same time that they tried to think if there was a link between that and testing, since it was such a rare disease. There are different things that went on.

Question: Did anything ever come out about that?

Nick: University of Utah came down and did a study on it and tried to see if they could figure out any kind of a link because a lot of them contracted the disease right around the same time period, the 10-year frame there. They never really could make anything. And, of course,
everything that DOE has ever presented to us on all of these downwind things no matter what their concerns were, whether people said their sheep died, they’ve never been able to prove that anything was directly result of the radiation. That’s tough to prove. It is tough to draw those correlations. Of course, from what we know, we can’t ever establish a link. I don’t think there’s any known red lines still on a lot of things, I mean, they do a lot of experiments and things. But, whether or not any of those things are actual causes of different things, I don’t know. It seems like they’ve always had a good explanation as for why it wasn’t. You really can’t prove that it was. It’s like most things, you can’t really prove 100% it wasn’t, but you can’t prove 100% it was, either. There’s other factors that cause the same problems. So, who says that this was it and not something else. To me, that’s how I’ve always seen the spin on everything that’s dealt with these kind of things. We’re really not guilty of anything because you really can’t prove that what we did caused anything. That’s kind of the way I see things from them. Something is there, something is causing it because it’s just an abnormal thing going on. But who knows what it could be.

Question: Has the station always been in the same place or was it moved?

Nick: No, it’s always been in the same place, to my knowledge. It was built right there in Overton between the library and the community center. It’s kind of off the road, towards the back of those lots. It’s really not up front where it can be seen more and that was always a concern, how much foot traffic. They kind of put it there. Sometimes, they put them on school campuses and things. But they just kind of left it there. It’s a little bit hidden in a way because it’s just off the road so far you almost have to know where it is to go to it. But they just left it
there and it’s been fine, I suppose. A few of them have moved, when they realize that a community changes and there would be a better place. I think the cost of moving them becomes an issue. They talked about maybe doing something with this one, but the budget was not there, so they’ve never done that.

Question: How has having a station in your town changed the way people perceive nuclear testing?

Nick: Well, there is none. I mean, people don’t even think about nuclear testing anymore. It’s a forgotten issue. If they ever resumed it, then, obviously, I’d think you’d have a whole new generation of people now coming up and start wondering “are we safe?” The issue would become an issue again because those who have lived through it and have seen it and don’t worry about it anymore have forgotten that it was a big deal. I think if they started again, it’s been gone a relatively long time, ten, eleven years, it would become an issue again just to say it is safe.

We have good technology and it works. And I think it creates good data. I think people will say it does that. We’ll accept that if Yucca Mountain ever goes on. The only threat to me in those issues is, in this day and age, we live with terrorist threats. It’s what is the unexpected thing that could happen, not the planned. I think we can plan and take care of everything normally, but how much risk are we taking when somebody wants to do something that isn’t normal, then how to deal with that. But you can’t do that with anything. They always demand zero risk on nuclear radiation and we don’t put zero risk on anything else, which makes it kind of unfair.
Question: You said there was milk testing?

Nick: Yes, they did several dairies here. A farmer named Leonard Marshall had some dairy cows for years. Even after he quit dairy farming, he always had two or three that he milked. I know that EPA did it. They came and would always get milk samples from him and that went on until just a few years ago. I don’t know that they are still doing that here within the last few years, but it’s been just recent if they quit. I know they’ve done water testing in the past. I got an e-mail just a while back and they were going to come and they want to do more water samples again from wells.

They’re going to start that again. Yes, that’s gone on and that’s another thing that shows that they are concerned and want to make sure that everything is safe. I think, looking ahead, you have to have some kind of a base to compare everything to. If you’re taking samples and doing everything now when nothing is happening, then when something is happening, you can say, look, nothing has changed. If you haven’t done it now, how can you prove again? That’s kind of how it was before. Well, we can’t prove how it was before and this is how it is now and it all seems normal now. If you had all that in place before they ever did the above-ground testing, you could correlate the two and prove that what you did or didn’t do, didn’t affect anything. I think that’s important that they do that. Now, if there’s a change, you know what caused that change. I think that’s good.

Test resumption is also a question. It depends on who else gets the bomb and whether they’re a threat; and all of a sudden, our arsenal becomes very important and critical that we are ready to defend ourselves. I know the scientists are going crazy saying, “we don’t know after you sit there for this long, we’ve got to find out, if all the stuff is going to still work.” To me it
just takes one or two events out in the world, and testing will start again real quick. You just never know what’s going to happen. That’s what is hard, I think, for DOE. They’ve got to stay ready to do some things and, yet, they lose other technology. They talk about their well drillers. People with expertise are needed to do those things. When they’re not doing them, no one is staying up to speed on doing them again. You lose the expertise in some of the things you’ve done in the past. I know those are concerns.

For all the money that’s spent, this program is kind of a drop in the bucket. I think the potential public relations from it, just the rapport they have with communities, is probably worthwhile. That’s what they told us is why they kept it. Because here we are, we’re trained. If you lose all that, then you start from scratch again. It’s easier to maintain than it is to get rid of and start again. So, with the things on the horizon, I can see that it’s probably going to stay. They talk once in while about how it’s going to be gone. It hasn’t happened yet.

I think it’s a good approach. I don’t know how else you could do it and be as effective as you are at this program. The public is always an issue with anything you’re doing. This is one way to try to help. I think people do appreciate, whether they believe you or not, the fact that someone from their own group is trying to reinforce what someone else is saying from the outside. I do think that it’s a good concept to develop and that what this is trying to do is take us out of the community and try to educate us and teach us all that’s going on. The guy that doesn’t have all the training doesn’t understand all the issues. I know I’ve had a lot of people tell me, “I don’t know what you do down there, Mr. Bowler, but, when you leave town, I’ll follow you. Just let me know when you’re heading out.” They’re just joking, but that’s how they perceive it. “As long as you’re not scared, then I’m not scared.” I think that helps.
Question: Has there ever been any opposition to having the station here?

Nick: None that I’ve ever been aware of. I’ve never heard of any opposition. I can’t think of a reason why they would even be opposed but I’ve never heard any from here.

Question: Has having the monitor be somebody from the community made a difference in how effective the program is?

Nick: I think it has. Once in a while, someone will come up to you and ask you if you’re still doing that and is everything okay. I think we don’t get as much of that anymore because, like I said, the report used to be in the newspaper every week, or every month. So, people saw that, and even though they didn’t understand it or know quite what it meant, they knew that we did it because it had our names in it, so people would say something to you once in a while. But I do think that if anything ever does happen, having someone that is local talking to them if it ever became an issue is important. If you did have underground testing and there was a venting, if we can stand there along with DOE and say nothing has been detected here in our valley, we are safe. And we say these instruments work. We know they do. I think those things are always good. I really believe that to make it work, you almost have to have that to make this what it is. To me, it’s the local community members on this that make this different from just anything else you do. If DOE just came out and did all the maintenance, it’s just the same people talking the same thing. It’s a credibility issue.

Question: Have changes in the stewardship of the program affected you?
Nick: No, I haven’t noticed any differences, other than that there used to be a little bit more promotion of things that I don’t see as much anymore. Maybe it’s just because there’s not a little driving force issue that we want to get this out in the front as much as in the past. To me, it’s been in kind of a background mode for a few years. DOE just wants to keep it but it’s not like we have to use you right now. That’s kind of how it still exists right now. We’re kind of in the background where we’re doing our thing, and if it ever becomes an issue, then we can jump forward and jump to the front lines on things. That’s how I see it still. I don’t see anything changing yet on that. The change from DRI and all these different things, I haven’t noticed anything different other than they took out a little bit of the equipment a few years back saying that it really wasn’t necessary, the noble gas sampler and the heavy hydrogen tritium collector. I suppose some of those pieces of equipment would come back if they became an issue again.

Question: How valuable have you found the training that you’ve received?

Nick: We’ve had some really good trips and weeks up at the mountains. We took the trips to the Test Site and we’ve been to Vegas a few times and we’ve gone to Cedar a few times. I’ve always looked forward to that. It’s the people that you get to know from the other communities, the little family we have of community monitors, that’s been really the most fun of it all. Just the fact that we get together annually and have these few days together and we get to know each other really well. That’s been a lot of fun. I really liked it and I’ve learned a lot. It’s been quite a few years since we’ve been at the Test Site. A lot depends on who you have on your bus talking because the guys have different expertise on different things. It was a bit funny because
they told us different things you didn’t hear the last time. I was a biologist and never dealt a whole lot in the physical sciences, so I’ve been fascinated by a lot of the speakers that have come to the training. Just interesting in general are the reports on what’s going on at the Test Site and the different things that they’re trying to do now. I really like it. Like I said, it’s always been fun, you learn a lot. So, personally, I’ve benefited a lot from being involved in it.

Question: Is there anything you’d like to add about the program?

Nick: As far as just incidents, we’ve had a battery stolen a few times and our station is across from the police station. They finally put it under lock and key. Other than that, we haven’t had any real vandalism with it. I guess everybody here is just pretty happy and too busy to be concerned about anything. And that’s kind of how it’s gone. It’s been a pretty easy job. The guys would go down and read the stations and change the filters and do things and that’s about all there is to it because nobody else really asks for much.

One of the things that they used to do and has a correlation to the program is you went in and had your body scanned. They did it at EPA. My family loved it because they got $50 each. I got a $100. And they had big old tubes and you’re wondering what are they doing to you, what’s happening to me. They have this big old steel vault that they put you in and they said, oh, yes, it’s safe. It’s downstairs. You go down there and there’s this big thick steel wall, there were two of them. It’s huge and it’s thick and the doors make noise. They’ve got something like a dental chair sitting in there and they have this big cool liquid nitrogen sensor tubes. You’re laying there with the cord down like an inch from your chest and you have to sit there motionless for an hour. It just collects radiation from you, I guess, and it’s reading that. You could do that
twice a year. So, the kids got $50 each, also gave a urine sample when you left. But, $50 each for the kids, and I think I got $100 or $150. That’s why I said you could go to Vegas and walk out with $300.

They finally did away with that and then they kept the history and they wanted to keep a database of all these people and just how much your body retains of exposure. They used us community monitoring people, they had us and, of course, they had lots of other people that did it, too. That was a fun thing. Our kids still joke about how safe it was and they’ll say, yes, that big old steel vault. They were standing outside and they were in there with you. It’s funny.

Then they used to always give you the physical and you could go in there and you could have one every year, a really thorough physical. They had some old Russian that did it. It was beautiful. I think a lot of those health-type issues were because of the fact that they were doing above-ground testing and there was potential for radiation exposure. When the testing stopped, a lot of those things stopped too, because it wasn’t an issue anymore. Our kids still joke about all those different experiences you get through this program. It’s been a lot of fun.
Pahrump, NV

Station Established: September 16, 1981
Current Status: Active

Current Managers: Larry B. Goins
                Jason L. Odegard

Former Managers: Vernon Andrews
                Albert J. Gianotti
                Daniel J. Donnelly


Vern Andrews - Original Station

Larry Goins – Station Manager since 1988

Question: When did you first become aware of the CEMP program?

Larry: Gosh, it’s been probably fifteen years ago. I was working at Pahrump Valley High School at the time with Al Gianotti, who took over as the lead person there. Then they approved an assistant, so I was an assistant for several years under Al Gianotti. I’m estimating it was probably around 1988.

Question: And, you took over for him when he retired?

Larry: I did.

Question: So, you are obviously a teacher? And you teach high school?

Larry: I do. I’m currently at Sierra Vista High School. I’m the Athletic Director and I teach a careers class.
Question: Were you aware of the monitoring before you became involved?

Larry: No, I was not. Everything I knew or learned about that, I got from Al.

Question: Was he the first one with the station that came on in 1981?

Larry: No, he wasn’t. It was the gentleman that ran the Sears store in Pahrump, Vernon Andrews. And I’m not even sure if he’s still alive. But Al replaced him.

Question: What made you want to be involved in the program?

Larry: Well, I think probably, more than anything, a curiosity about the Nevada Test Site.

Question: Did you have a background similar to Al’s?

Larry: Well, yeah, a little bit. I have a minor in and am certified to teach science. It just never has worked out that way.

Question: Do you think being a teacher affects how you view the monitoring?

Larry: That’s an interesting question. I think, to a degree, it does. I like to think that most teachers are a little bit more open-minded about what’s going on with Yucca Mountain and what was going on with the testing at the time I came in. It seems like the majority that I talk to, and
that’s probably more of my reference base than anything, are pretty supportive of Yucca Mountain. And do not seem to have the fear, I guess, that you read about in the media about how everybody’s fighting it. So, yes, I think they’re a little more receptive to the things that are going on up there.

Question: Do you use the station in your teaching?

Larry: I have in the past. I used to when I was in Pahrump. I taught health and so both Al and I would utilize it a little bit, especially information. I used a lot of information that I received from them related to the levels of radiation that your body could withstand in my health class. So, yes, I have used it. Al, I know, used to have someone come in and present on an annual basis. So, we have utilized it as a resource, DRI and EPA as resources.

Question: Since you’ve been involved with the program for so long, you were there when the underground testing was still ongoing?

Larry: Yes.

Question: Okay. Did you get more community interaction at the station because of that, do you think?

Larry: At that time, when we did get interaction, it was after a test and maybe somebody had had a plate shake on their wall or a picture shake on their wall and there had been some type of a
test that had caused that. Maybe they saw it in the paper and we did get a little bit more feedback at that time.

Question: Did you ever have anyone come up to you while you were working the station and ask you questions?

Larry: I think that happens more than anything else. I seldom get a call. Our names obviously are posted down there with our phone numbers and everything, but I seldom get a call related to it. It’s much more likely that someone will walk up to me while I’m changing out the station and say, hey, are we supposed to be glowing, or some of that strange perception that you get.

Question: Has the station in Pahrump been in a few places?

Larry: Not in the time that I’ve been with it. It has been in the same spot and has been scheduled to move two or three different times. In fact, I went one time to the town board and requested permission to move it and it was approved, then it ended up not getting moved.

Question: It’s located by the county buildings then?

Larry: The old county building.

Question: What do you think the program brings to your community?
Larry: Well, that’s kind of interesting, because there hasn’t been all that much feedback. I try to encourage people and students to access the website, if nothing else, for weather updates. But, I think, in some ways, for those that are aware, it brings a sense of security knowing that somebody is looking out for them and monitoring what’s going on with radiation in the area, even though we pretty much know, for the most part, it’s not a great concern.

Question: Why do you think Pahrump was chosen for a monitoring station?

Larry: Because of its proximity to the Test Site and the fact that it’s to the south. I’m sure that had a little bit to do with it. Also, you know, at the peak, when all the underground testing was going on, a large number of the people that worked out there lived in Pahrump, too.

Question: Do you think that was a factor?

Larry: Well, maybe, to a degree. I don’t guess that ever in any of our workshops or anything that anybody’s addressed specifically why the various areas were selected. I’m just basing that on assumption that it was because of our proximity. If you look at the other sites, pretty well every community that borders or is very close to the Test Site, Amargosa, Pahrump, Tonopah, and Rachel, all of those have monitoring stations. I guess, yes, I just assumed that it was the proximity.

I think, in some ways, it provides a sense of security for those people knowing that, at least, if there were a reason for concern, somebody was monitoring that to make sure that it wasn’t. I’m not sure that the awareness of the station and why it exists is all that great. That’s
unfortunate because, I think, that a lot of people’s perspective of the threat of nuclear waste or nuclear fallout when they were testing would change if they were more familiar with the things that were going on with the stations.

Question: Was any other kind of testing done in your community, of water or milk testing?

Larry: They have taken samples from wells over the years. There was maybe a three or four year span where they went back to testing. It was probably after underground testing ended and before Yucca Mountain was really geared up where I was not involved, they did away with the assistants. Anyway, at that time, I think, that was probably the first time that they took a sample from one of the wells. And then, I think, they did it a couple of times since.

Question: Has anyone ever asked that the station be removed?

Larry: Not to my knowledge.

Question: How has having the monitor be someone from the community made a difference in the effectiveness of the program?

Larry: I think that it is very effective especially in a community like Pahrump and I’m assuming most of the other communities around are somewhat similar, nobody is from Nevada. In the case of AI and now myself, we’re considered oldtimers, not only in the state of Nevada but certainly
in Pahrump and we’ve kind of grown with the community and we know probably more people than we care to admit. I think that has provided a degree of confidence.

Question: Did you ever attend any of the town hall meetings that were held?

Larry: I’ve attended a couple, yes.

Question: Any of those ever get exciting?

Larry: You know, there really hasn’t been. It’s kind of interesting when we go to the workshop in the summer to hear some of the other stories because I’ve never been to one that got heated, so to speak. But I’ve certainly heard some of the stories at our workshops of those that have.

Larry: One thing that the program does that is kind of nice is attend the harvest festival in Pahrump. It’s held every fall and is kind of a big deal for the community. For years and years, I don’t know if just DRI has done it or really where it’s come from, but there’s always been a booth with information on, originally, underground testing and then Yucca Mountain and other issues. So, they’ve created a presence, not only with the station, but also with their booth and participation at the Harvest Festival.

Question: What do you think about the training you’ve received?
Larry: Some of it has been extremely interesting. Some of it, I think, is over my head and I don’t always understand. Dr. Sandquist is so knowledgeable that sometimes he loses me, to be quite honest with you. I have trouble understanding everything that’s going on because it’s very technical.

For the most part, the one thing that I can say about that is that it’s created a level of confidence in me that makes me believe that the storage of the nuclear waste is not a big deal in terms of our safety. Certainly something to be aware of but I don’t believe that it’s something that’s a huge threat to us. That’s probably been one of the biggest things that I’ve taken away from the training.

Question: How about the CEMP as a network? Did you find the training valuable because of that?

Larry: You ask about the heated meetings and the confrontations that some of the other people have had but, certainly, being aware that those things have taken place and being able to network with those other people that have had those experiences. That has been of interest and makes you aware of some of the things that are going on.

Question: Did you ever go on any of the trips out to the Test Site?

Larry: I have been to the Test Site one time. That would have been far and away the most interesting thing. That must have been probably the early ‘90s when I was last out there. It was extremely interesting to see the different results of the tests and even some of the above-ground
testing that took place, back in the ‘50s, some of the results from the tests that were conducted. The other thing that was real interesting, I thought, was, when they were comparing during the Cold War the tests that the Russians were conducting, and how their tests kind of paralleled ours. I thought that was real interesting, too.

Question: Something they talked about out on the Test Site when you were there?

Larry: Well, yes, they did at the time in comparing the different things that have happened. And, of course, they’ve talked about those in our workshops as well.

Question: Did you ever participate in any of the body counting that was done?

Larry: Yes, I have and so has my family.

Question: So, you came into the EPA and then you must have met Anita Mullen?

Larry: Yes, we did.

Question: About how many years did you do that?

Larry: I would say, probably, four or five years on kind of a regular basis. It was a big deal for my kids because that was their best way to get Christmas money.
Question: How would you characterize that whole experience?

Larry: It was completely painless. You went in and you got to watch T.V. in a quiet environment, very low stress and kind of enjoyable, to be honest with you.

Question: Do you have anything else you’d like to add about the program?

Larry: It’s been good. It’s created a much higher level of awareness of what’s going on at Yucca Mountain and with the testings before that for me that I’m not sure I would have had had I not been involved.
**Pioche, NV**

Station Established: 1999  
Current Status: Active  

Current Managers: A. Paul Donohue  
J. Randall Allen

*Lynn Karr on Paul Donohoe:* Paul Donahue has been taking care of that station for years. And, for a long time, he did it for absolutely no pay. So, when they finally made it a CEMP station, that was nice because we could start paying him because he has been a real asset to us over the years.

Question: When did you first become aware of the CEMP program?

Paul: When the station first went in in Pioche around 1999.

Question: What made you want to be involved with the program?

Paul: Garrity got me involved. Then when he retired, I took over for him.

Question: What do you think the program brings to your community?

Paul: Mostly the weather information, which gets used a lot. I think it makes people feel safer to have it there.
Question: What is your profession?

Paul: I work for the phone company

Question: Is that a technical position and do you think your profession affects how you view the monitoring?

Paul: Yes, and I think it does affect how I view monitoring.

Question: How have people in the community demonstrated an interest in the program?

Paul: People come up and ask questions when I’m working at the station.

Question: How do you think the station and monitoring is viewed by the community?

Paul: Very favorably.

Question: Has the station always been the same place in your community?

Paul: Yes, at the courthouse.

Question: How has having the station in your town changed the way people perceive nuclear testing?
Paul: At least, they know if there is any testing, that they’re safe.

Question: Was any other kind of testing done in your community?

Paul: Water testing, and they still do that.

Question: How involved does the community get in the monitoring?

Paul: Not very much at this time.

Question: Has anyone ever asked that the station be removed?

Paul: No.

Question: How has having the monitor be someone from the community made a difference in the effectiveness of the program?

Paul: It makes a lot of difference. If there’s any questions, my name’s on the board and they can contact me. They don’t just see a lot of white trucks coming and going.
Question: How have changes in the stewardship of the program affected you?

Paul: Not very much except that it’s a lot more organized under DRI. The EPA people were nice but it’s more organized now, the business office, everything.

Question: What did you think of the training you’ve received?

Paul: Very good.

Question: Do you have any other stories about the program you’d like to share?

Paul: Not really, except to say that I’ve enjoyed being part of the program. I often see Lynn at the station and we talk about things. I appreciate that ‘one–on-one’ time. My company was involved in putting in the DSL upgrades for the station.
Rachel, NV

Station Established: 1981
Current Status: Active

Current Managers: Kaye Allisen-Medlin
Gayle Williams

Former Managers: Christy S. Graf (Castleton)
Sue Lindow
Ruth Agee

Kaye Allisen-Medlin – Station Manager since 1999

Question: When did you first become aware of the CEMP program?

Kaye: When we moved here to Rachel, and that’s four years ago. I’ve been in the program basically since we moved here.

Question: Was the station already here then?

Kaye: Yes. The reason that I got pretty vocal about it was because they were going to take the station out. And we don’t have many babies but the babies we have crawl on the ground and they pick that stuff up, and I said, “You can’t take it out because what if something happens and
we’re not made aware of the fact,” because a lot of times it is hidden and we don’t get information. They sent three men out here to talk to me.

Question: Do you remember who they were?

Kaye: Yes, I remember two of them real well.

Kaye: Bruce Hurley, Ken Hoar, and the man that works with the seventeen Indian tribes, Bob Furlow. I’ll check in my book.

Question: Is that a book you keep on the program?

Kaye: Everything for every program that I’m involved in. Find your territory, the CAB, church, Farm Bureau, the legislatures, you name it and it’s here. Historical society.

Question: So they came up to talk to you about the station?

Kaye: Yes. And I was able to persuade them to come to a meeting at the Alien Inn. Some of the people that came in were locals and the DOE talked to them, and it was decided to let it the CEMP stay here.

Question: What was your opinion of the program before you became involved in it?
Kaye: My background is, when I was working in California, I was with Atomics International, and so I’d been involved in testing, and that interest has stayed with me. I was very much in favor of the program, and I’ve talked to a few monitors that they’ve had around here. Helen Uhalde, they took her station out. We just haven’t had anything out there for years. Her place is in the next valley. They are sheepherders. The thing that I was interested in was the cancers that came up out of it and the different types of cancers.

Question: That came up in Rachel?

Kaye: Yes. Three people have died here in Rachel from brain tumors. And up in her valley, they have all had stomach cancers. Family members, friends and people living in the area at the time. My background is in research and when I get something, I take it like a bone, to see if there is any basis for it. And there wasn’t. Each person that died, one lady never ever worked on the Test Site and she came from another state.

Question: These are not people who were here during the above ground testing?

Kaye: No. My brother-in-law was, but he hasn’t gotten anything and neither has his wife or the kids. Quite a few of the people here were involved with the testing and they didn’t. The doctor down in Las Vegas was the one that said...
it’s a very unique situation, that you have three people up here, because he performed all the surgeries. And no correlation is coming out. But that’s why the program is important.

Question: How long have you actually been a station manager?

Kaye: Four years since I arrived.

Question: What made you want to be involved in the program?

Kaye: Information.

Question: For you personally or to share with the community?

Kaye: Both.

Question: What do you think the program brings to your community?

Kaye: An awareness, I think, that it’s here, that it’s useful. If they’re interested they can go look. We have some people that are very interested and some who don’t really care. But, with the fact that we have so
many new things that have been added to the program, that’s what brings them. The weather is
good because we have a lot of people that are hikers, just go out in the desert and look. They go
out in all sorts of vehicles: campers, bikes, you name it, they use it, but I know a lot of people do
use it for that reason.

Question: A lot of the stations managers are teachers and you said your background was in
something else but I know you’ve been involved in teaching. Do you think that affects the way
you look at the program, in your case, having a very diverse background?

Kaye: It’s interesting because I’m getting the 4-H kids interested in the program, and I think the
more an individual knows about a subject, the less afraid of it they are. We might be able to start
a new career for them in science, you just never know. And the world’s a stage so they can pick
up whatever they want.

Question: Did that involve doing the field trips to the station?

Kaye: Yes, the 4Hers build rockets. Their parents are interested in it, so that’s why that’s an activity.
Two of the ladies that are leaders out here also work up at the base.

Question: How have people in the community demonstrated an interest in the program?
Kaye: I can speak for the 4-H kids, we’ve worked in that direction and the parents are taking part in that. We use it in our Rachel Day parade, that information, and I try to have somebody come, either DRI or the base come over here and explain something, whatever their field is. Some of them just go on the Internet and check it out.

Question: Anybody ever ask you any questions when you’re at the station?

Kaye: When I’m over there, and I’m sure Gayle too, they’ll come over if they’re at the Quick Pick visitors center. The other guys, just whenever they can catch me, if they’re thinking of something or they’ll call me up on the phone and ask. It’s mostly about the weather and about the winds. We’re having new people moving in and they want to know about the effects of radiation and all of that stuff over here so I steer them in the right direction onto the internet.

Question: Do you ever get any questions from tourists?

Kaye: Oh, what the station is, what it does and we got the little pamphlets there, so I give them the pamphlets, and that’s basically it. Probably, maybe once a month or something, somebody’ll come over and ask me when we’re working there.

Question: How do you think the station and monitoring is viewed by the community?
Kaye: I think pretty favorably.

Question: How long has the station been there?

Kaye: I would think that it’s been here since ‘81 because the Agees are here and Ruthie had been trained on the program. Ruthie must have gotten on the program when she was first married. I would say 16 years, if not more.

Question: Why do you think this community was chosen for monitoring?

Kaye: Because of our location and proximity to the Test Site, and the way the winds blew at that particular period of time.

Question: And the station is over by the store. Has it always been there?

Kaye: Yes.

Question: How has having the station in Rachel changed the way people perceive nuclear testing, or has it?

Kaye: I don’t think it has. They grew up with it. When I was in California and they were doing nuclear testing over here, I was afraid of deformities from testing, so I kept kind of abreast of it even when I was in California prior to my moving here, because Jim’s brother, Steve, who’s over
in the next valley, had deformities in cattle. We don’t have any more problem with that now, and neither do any of the other ranchers.

Question: Was that while above-ground testing was still ongoing?

Kaye: Yes. And it was for not just that generation but for a few generations of cattle thereafter. That’s what I was concerned about. And for the babies that were born. You don’t know how long that stuff lays dormant in the soil as the wind comes and blows it up. That’s why I didn’t want it moved.

Question: How involved does the community get in the monitoring?

Kaye: Not at all.

Question: Has anyone ever asked that the station be removed?

Kaye: No.

Question: Has having the monitor be someone from the community made a difference in the effectiveness of the program?

Kaye: The program was established in 1981. The CEMP history from 1981 to 2004 in Rachel involves a total of five managers, all local women, Sue Lindow, Christy S. Graf, Ruth Agee,
Gayle Williams and me. In my opinion, the “powers that be” felt a local person would serve in a volunteer position more effectively than bringing someone from the outside. The program has grown and been successful, therefore I think the objective has been met.

Question: What do you think about the training you’ve received as a station manager?

Kaye: Very good.

Question: Have changes in the stewardship of the program affected you?

Kaye: I do not believe anyone in Rachel or the surrounding communities have even been aware of a change taking place. The transition went as smooth as silk. In my case, Ken Giles was a great mentor and an asset at my side. Lynn Karr is always a welcome sight to see when his truck pulls up to the monitoring station. Lynn’s knowledge as well as Ken’s have aided me tremendously.

Question: Have all the station managers in Rachel been women?

Kaye: Yes.

Question: Do you think male station managers have a different perspective of the community monitoring, versus female station managers.

Kaye: I would think that they probably would, because the women are nurturers, they are more family-oriented in the sense of “what to do in an emergency situation.” That’s true in my case,
but I still have the scientific background too. I think that you’re going to find that with the male managers the focus is more in the science area. When I attend the various meetings, I hear of things that I didn’t even think about.

Question: Do you have any stories about the program that you’d like to share?

Kaye: Yes, on Rachel Days whenever the CEMP team is invited they bring with them years of experience, put up displays, do programs both for adults and children at the CEMP equipment. As new programs are developed the DRI representatives will be bringing Rachel the future of the atomic age.
Sarcobatus Flats, NV

Station Established: 1987
Current Status: Active
Current Managers: Joan Terrell
Former Manager: Robert Terrell

The monitoring station in Sarcobatus Flats is located on the Terrell place. Bob Terrell took over the station from Sue Holloway then managed it and changed the air sampler in the early years of monitoring. Later the air sampler was removed. Upon his death in 1997, his wife Joan took over the task of watching over the station even though it was maintained initially by EPA and is now managed by DRI.

The area is named after the Sarcobatus sagebrush and for the adventurous traveler, it would appear that that is all that is out there. However isolated, people do live in Sarcobatus Flats and it holds an important position in the testing ring around the Test Site because of prevailing wind patterns. Due to its isolation, people there do not have many visitors. Because of this, field monitors allow extra time to visit and catch up with the residents.

Joan Terrell on the isolation:

People ask me where I live. When I tell them, they say, “I didn’t know anything was out there.” They drive through here and don’t see any of these places. All they see is the highway. So many people think there’s nothing out here to see. They’re wrong.
Brian Brown – Station Manager, Emeritus

Question: When did you first become aware of the CEMP program?

Brian: It was the early 1980’s. One of the other teachers at the school named Holly Wenger, they recruited her to run a local station. Then she moved on after about a year, so they asked me if I would do it. It was Jack Coogan and Nate Cooper and one other fellow who came down here actually for the summer and introduced themselves and so I agreed. I went to the training and then got involved in the program. So, it would have been, I think, around 1982 perhaps.

Question: You knew about it before you actually began?

Brian: Yes, because one of the other teachers at the school was doing the job.

Question: Did you have any thoughts about it at the time?
Brian: I think like everyone else living around here, initially my knee-jerk reaction to the concept of living downstream, if you will, from the Nevada Test Site was not favorable. But I thought this would be a good chance for me to get educated and find out what really goes on there and see the science of it. I was curious about it and somewhat suspicious of it, I would say.

Question: After you were involved with the program and had your training, did you have different feelings about the program?

Brian: Yes, sure I did. Once I truly understood the nature of radiation and what it is and what it isn’t, it made me more comfortable about being here. The popular idea, the only thing you ever hear, are exaggerated horror stories about the effects of radiation, how no creature can tolerate any amount of radiation. Just a lot of the really generic misconceptions, which I think most people to this day still believe. I was a science teacher and have a hobby interest in all the sciences. So, once I could see what they were doing and play with the instruments, then it convinced me. I learned about it and I felt much better about it.

Question: What made you become involved in the program?

Brian: Curiosity.

Question: What do you think the station brought to the community, if anything?
Brian: I made a point of dragging my science classes up there and showing them the station. At that time, we all had hands-on instruments and I would bring them into my classroom and explain how they worked and hide sources around the room and let the kids find them. I think we produced a generation of school kids who have had a Geiger counter simulator in their hand and know something basic about radiation. In terms of the general public, because our station, unfortunately, was off the main highway and kind of buried behind the school near the medical building, it did not get a lot of public exposure. Occasionally, someone would ask me about it, and I would try to explain what it was to them. I don’t think it had a huge impact on the community except for the school kids and maybe they went home and told Mom and Dad.

Question: Putting the station here was a contentious issue with the community. There was some opposition to having a station out there?

Brian: I’m not sure if there was initially or when we tried to relocate it. About three years ago, we tried to get it back again. The woman who owns the town refused to have it. She saw it as an approval of the nuclear industry in general. We attempted to explain to her what it was, but clearly her mind was made up. She wasn’t going to be confused by the facts. She didn’t want it. It was her land. Initially it was put on school property, not on her property.

Question: Do you think your profession affects how you view the monitoring because you are a science teacher?
Brian: I think so. I think so because I had a background in science; the scientific process, to working with the metric system basically. Unfortunately, a lot of the general population cannot or did not want to understand. I think anyone who is willing to accept the training could learn about the monitoring station and could do it. It was my understanding that the reason they originally recruited teachers and scientists was because we had a background and familiarity and understood what the goals of science in general are. So we were a receptive audience to begin with.

Question: The station was here from the early ‘80s until the mid ‘90s?

Brian: Yes, mid 90s.

Question: Why did they take it out?

Brian: A decrease in funding. It was about three years after they stopped below-ground testing, and as I understood, the funding was going downhill for the Test Site in general and they were just chopping everything. This was the only station in California and they eliminated this one and some of the ones in Utah, like Salt Lake. They did a round of cuts, eliminated about four stations, Salt Lake, Ely, and maybe Austin. They’re considering reinstituting this one and I’ve agreed to participate. I’ve enjoyed the program. There are other places in Shoshone where it could go. It was a very odd situation.
Question: Have you noticed any difference in exchanges with people and how they perceive the nuclear testing because the station was there?

Brian: I had conversations with local people. I truly do think that having me telling them I’m reading this stuff and I’m taking samples and there’s nothing you need to be concerned about had a real positive influence. I didn’t have a lot of those of conversations. I had a lot fewer of those than I thought I was going to, but I think having it there was a good thing. Basically, if I told them things were okay, then things were okay. If I did the station and started screaming and running in circles or something, that would have been really bad, packing my family and leaving if something is just not right.

Question: Do you think that having the monitor be someone who’s in the community made a difference?

Brian: Oh, yes, absolutely. It’s a really good idea. And the fact that I live here and raise children here that don’t have tentacles growing out of their foreheads. I know it makes a difference.

Question: When the station was being removed, was there any response from the community?

Brian: Not really; as far as I could tell. You have to understand also that during those years, this community was undergoing a real change. The community declined economically and population-wise, so there wasn’t a lot of interaction with the station. And actually, it was kind of
funny because when they pulled it, they didn’t notify me they were going to pull it. So I went to
do the station one Monday and it was gone.

Question: It was gone?

Brian: I called them and said I can’t do samples today. I hope you guys visited over the
weekend, because if you didn’t, you’ve got major vandalism problems. It was gone. I went
there and there was a bare cement slab. So I didn’t have a chance to warn anybody.

Question: What kind of instruments did the station have?

Brian: In the early days, they had the cryogenic units to work with. Those were kind of a
struggle sometimes. But it got simpler and easier over the years. They started paring down the
kinds of testing they were doing. They used to have liquid helium flasks or material at each
station and when I started out, there were six different systems, including something that needed
cooling to make it efficient. I don’t know what you call it, it’s been so long now. And we had
these tanks of liquid helium that they were always replacing. We had the refrigerator box. They
had an actual refrigerator there because the flasks that collected the moisture were more efficient
if cold. I got in trouble one time because I put a six-pack of beer in there. I got a nasty note
from the monitoring guy telling me it was unprofessional. I wrote him back a note that said
“lighten up.”
Question: What kind of interaction did you have with the monitors as they were coming around, the field people?

Brian: The field guys? It was good. It was always really good. If I had a problem, they would try to fix it. The communication has always been there, very cooperative. What I started doing after the first couple of years also was to use the program as a real resource in my classes, particularly junior high science classes. I designed a nuclear unit around the material they gave us. And one time I requested extra hand-held units and they brought a whole bunch of them. We had 10 or 12 of them. Nearly all of the kids had them. We did an open house one time. When all the parents came into the room they got monitored. The kids thought it was pretty cool to be doing some real science. And I had given a couple of parents lantern mantles or sources to hide so the kids could find them.

Question: And did they?

Brian: Yes, they did. But the parents were alarmed initially that you could get a reading out of a lantern mantle. You know, we had to assure them that it basically said more about the sensitivity of the instrument than it did about the power of the source. We educated the parents in that regard, too.

Question: Do you have any comments on the training you received?
Brian: I really enjoyed the training. I continue to enjoy the training. I now am Emeritus. I’m surprised but delighted that they continue to invite me back every year. And we have talked in the last couple of years about firing up a station in this area as the Yucca Mountain thing becomes closer and closer to being a reality. I think that if they end up trucking some of the waste up Highway 127, our main conduit, that they would do well to re-establish a station somewhere along there. And since they have this body of data from Shoshone, they can kind of piggyback on what has already been established there. But the training was always good and they always made an effort to make it as realistic as they could. When we had the accidents, those were good. Those were fun.

I always enjoyed the tours of the Test Site. And, one thing I really enjoyed was hearing from guys that have actually been involved in the early days of above-ground testing and the end of Manhattan Project. To me, that was living history. Bob Taft and one of the DRI guys had these amazing stories about the amount of radiation that they’ve walked through and worked around over the years. I’m not saying it was the right thing, but it’s remarkable.

The training was fine. Getting together with the people year after year was fun. You know, it was a very family-oriented group because of the Utah connection; there was a large group of LDS folks in the program. And that was fine because it made the focus on the family. That influence was definitely there and the kids, when we started, our children were toddling around. The last time we made them come, we dragged them there under protest. They were in high school and now they’re in college. It was kind of neat for people to see that progression.

Brian Head was a good choice. For us living down here, July and August are pretty hellish. So, for us, it was delightful to be able to go to the mountains in Utah and not have to lay out money but actually get paid a little bit to do it. And it was good for my wife and kids. They
were able to go and play in the mountains and go to Cedar City and it was a nice break. We have very fond memories of that, the program, all of the barbeques, the training. The barbeques were always a lot of fun, family type barbeques. That was a good time also.

The one thing that sticks out in my mind is one on the training exercises with Marg Herndon. We did a kind of nuclear accident training right about a mile off the road in Brian Head and they took some of the DOE, some of the trainers, and Marg Herndon. The exercise was two drunken drivers who had hit a pick-up truck, carrying some nuclear material and so they had this thing all set up. We drove up and came upon this scene. Now, they had also told the local Utah highway patrol and the Brian Head fire emergency people that they were doing this training and asked them if they wanted to participate. Sure, they did.

It was on a dirt road behind Brian Head. So, when they said go, you know, everybody converged on the scene and behaved as if it were the real deal. So we came over this little rise and there’s a pick-up truck with this stuff laying around and here’s this car as if it had smashed into it. There were barrels tipped over and there’s stuff and there’s a guy hanging out of the truck and there’s Marg and this other guy waddling around with beer cans. First of all, they go in and monitor and they decide they have to suit a guy up and all the rest of it and Marg and this other fellow are playing the drunk part. They’re doing it really well. Finally, they decide it’s safe for the cops to go in there and the cops go in and they cuff the guy. But Marg really got into her role too much and she was just being this belligerent, really belligerent woman. The guy would tell her to turn around and she would give him a hard time and finally he tried to turn her around. And she said “you get your hands off me.” The guy grabbed her and threw her on the ground. I mean, he just did a tackle and threw her right on the ground and he put his knee on her
and pulled her. I think he hurt her. He took it really seriously. She got body-slammed right into the dirt there.

Question: I’m sure that was more than she bargained for.

Brian: Yes. I think at that time she quickly sobered up. She was a good sport about it. And then there were some mistakes made by the participants because there were guys slipping across the perimeter line and you couldn’t get the Utah cops to understand that you can’t go across that line to get this drunk driver because of contamination. Anyhow, that was fun. I have a vivid picture in my mind of Marg being body-slammed like a wrestling move. This guy, he was a Utah cowboy who was a highway patrolman. It was funny.

The other thing I have really enjoyed with the program is, even after I was Emeritus, the last two years that I taught at the school here, I called them and said that I’d really like to take the high school class on a tour of the Test Site when they drop the age down to 14. They gave us just a great tour. One of the older guys who had been in the program took us down into a crater. They have a road down right into a subsidence crater. And, the big pipe that they put the bomb in was still there. He took us out and gave us a really nice tour, more than you would get on the bus. I appreciate the fact that over the years the DOE I guess, would be the primary ones, really went out of their way anytime I called them for anything. I think I took at least two different tours of the Test Site. They made a point of doing tours. And, they were remarkable with these kids. I said, “you guys realize where you’re standing here, you’re in a subsidence crater right over ground zero. You know most people would think that you’d all be dead by tonight.” We had instruments and I let them monitor everything and they were clean. So for them it was no
big deal. It was kind of cool to be in this big hole, but they said, “when’s lunch.” They were not as flipped out about nuclear issues as people are at my age.

Question: People who have never been through a testing period or the Cold War may have a very different perspective?

Brian: Yes. If they do get the program going again, there will be some challenges because Tecopa Hot Springs has become the resting place for a lot of old nuclear activists that are still protesting even though there’s no testing going on. It will be interesting to see if they do get a station back in this region again, which I think would be a good thing because you can educate people and eventually they’ll come around and understand. Of course, everyone’s entitled to their own opinion. But for me, once I got the facts, it was like, well, okay. This is what radiation is and this is what it is not. There’s a science about what they did. You know, here’s a science about where they may or may not be migrating to on and off the Test Site. It made me comfortable about living where I am. It was good for me.

Question: Did you attend any of the community meetings?

Brian: I went to one of our community outreach meetings, a presentation in Bishop, California. Myself, Bob Taft and Nate Cooper. I was there because I’m in Inyo County and I did the monitoring station stuff here. There were protestors in the back of the room with signs. I was kind of disappointed because it really came across as just a government bureaucracy, pro-nuke and they just did not do a good job. As I was sitting on the stage listening and watching the other
guys do their deal, most of the protestors, people were getting more and more suspicious. They thought these guys are lying to us. I really began to realize that this is going to blow up in our face. By the end of the night, people were yelling at us. So I wrote a letter to someone just explaining what I thought and the mistakes we had made.

In the early days, when they did these community presentations, the feeling was we’re here from the government, we’re going to tell you the facts, but they typically sent a lab rat guy to explain this stuff. They didn’t get it that doing a public presentation is very different than talking to their peers or whatever. These guys would just lose the audience and people suspected they were being snowed with numbers and figures. They didn’t have people who were trained in doing public presentations. Generally, I think the program did not go well. They were just out of touch with their audience and did not understand the audience they were talking to. They did not do a good job of putting the audience at ease. That was frustrating for me because it was a good program and they had this good message to deliver which could be done, but they weren’t doing it right. Because I was a teacher and I stand in front of people all the time, I have to speak to an audience of eighth graders, or whatever, who are not interested or don’t think they are and I’d have to tell them. You have to kind of learn how to grab attention.

Brian: Are they seriously considering resuming testing? I grew up in Baker, California, just down the road about 15 miles. I have dim memories of going out in the desert outside at sunrise, being taken out there by my parents and brothers and sisters, just a mile out of town. We’d put our blankets on the desert floor and then watch the bombs go off. I don’t remember seeing the mushroom cloud or anything but this would have been in the late ‘50s. I was born in 1954.
My older brothers and sisters (I’m 48, so my brothers and sisters were 50 or 60) could see the cloud, could see the mushroom cloud coming. I don’t remember seeing the cloud. I remember going out in the desert in the blanket. I remember that part of it. I would have been five or six years old.

I was gone to college during the Baneberry incident. I never even heard of it until I came back and got involved with the Test Site. It was an underground shot. They shot it and everything went fine. Two or three minutes after the shot went off, and everything seemed fine, they got this big, huge vent that just blasted out. It went thousands of feet in the air, really, really hot nasty stuff. There was a fault that no one knew about, and when the thing went off, it blew the stuff out. It vented seriously. Most stayed on the side, but some got out. That was in the early 1970’s. It was a big scramble at the Site. When I joined the program in the early ‘80s, they were still talking about Baneberry. It was a big deal.

I think the program is a good program. It was worthwhile doing in those days. The other thing that has been interesting is how it has evolved and changed as the Cold War ended. These last several training sessions, they have shown us slides and said things which were classified when we first started the program, things that they could not have told us. We would have Q and A sessions. I can specifically remember a couple of times asking Bruce Church a question and his response would be “Brian, I cannot confirm or deny that.” Basically, don’t ask me anymore about tests and about testing they hadn’t announced and those kinds of things. Now they’re showing us slides of pictures of guys putting bombs together and what it looked like and all that stuff. When we started the program, that was not available. So, I appreciate the fact that, over the years, the DOE has become more open and treat the information like a piece of history. This is what we were doing, this is why we did it, good or bad, there it was.
On the last Test Site tour I did, the guy that did it was a retired employee and he was right there when they shot these things. He told us the story about going out onto the lakebed eight or ten hours after one of the tests. They had put some big bank vaults out there to see what effect it would have. He was part of the team that went back out and opened the vault and it was astounding how quickly after the event that they were back out there again, ten hours. That vault was 1,000 or 2,000 meters away from ground zero. Interesting because the perception even today is that the Test Site is poisoned ground, and if you go out there, you’re dead, basically. People don’t realize you can drive out there in tour buses and do all these things.

There’s a lot of ignorance. It’s daunting. The challenge I think this program has had, and has succeeded in some regards and in others has not, is that we need to separate away from this is the science of what actually happened at the test site from we’re pro-nuclear, we’re out here advertising for the government. I appreciated the fact that there were only a few times when I ever felt that they were trying to get us to kind of promote Test Site activities. A time or two, I actually raised objections about that when we were having our end-of-training wrap-up. A couple of times I’ve said, “when we started this whole program, you told us we were doing science for you guys, basically. Part of our credibility is based on the fact that we’re not advertising for the nuclear industry and we need to keep that separated.” I think they sometimes got a little bit enthusiastic about the message.

This was in the ‘80s when the Cold War was still going and guys like Bruce Church, who are by nature conservative folks, were at DOE. The whole program was made up of people like that who have been in and were deeply enmeshed in the Cold War and in the testing. They fervently believed in the mission they were doing. Sometimes the conversations were trying to
convince us it was the good guys against the bad guys or we need to get out there and convince the public of what we’re doing is okay. My response was, “no.”

I can’t think really of, with the possible exception of abortion politics, an issue that just seems to be more visceral to people than radiation and testing. Everyone’s initial reaction is that it is evil. They don’t realize that radiation exists everywhere in the world all the time, that there are natural sources. It’s just like water. It’s part of the world that we live in. That’s an endless task to try to convince or explain that to people. It’s like trying to make me a pro-nuke or whatever. It’s a no-win situation.
**St. George, UT**

Station Established: January 16, 1982  
Current Status: Active  

Current Managers: Scott Mortensen  
Curt Walker  

Former Managers: John F. (Jack) Heppler  
Kelly N. Bringhurst  
David J. Burr  

Jack Heppler – Station Manager from 1981 to 1996

Question: When did you first become aware of the CEMP program?

Jack: I started in the beginning. I was one of the original people that went to Salt Lake City and was trained at the University of Utah. So, that was in ’81 with Gary Sandquist. There must have been 15 or 20 of us, I think, originally. We represented the major cities in southern Utah and Nevada. It was a small group. In fact, when we started off, all the stations only needed one station manager.

Jack: Once I was into it, it was fun. I enjoyed it. I was with it for a lot of years and I really loved it.

Question: What is your profession?

Jack: I’m a biology professor at Dixie State College.
Question: How do you think your profession affected how you viewed the monitoring?

Jack: The monitoring did affect how I interacted with people in the community, a lot of phone calls, a lot of questions, and a lot of opportunities to talk about certain things in class that I wouldn’t have had otherwise. I would say, probably, that would be it.

Question: Was that because the underground testing was still ongoing when you were involved?

Jack: Yes, it was still going on and it was of great interest and there were all the reports about the cancer clusters and all the other kinds of problems that existed in the community at that time was still pretty much a real hot bit of controversy over the atmospheric tests.

Lynn Karr: St. George at that time had, what, 15 to 20 thousand people?

Jack: Now, we’re close to 50 to 60 thousand. So, it was a different community and I knew everybody. I had been here since 1965, when it was a really small town. I knew the major families. I knew people by sight and everybody knew me. It was kind of a good thing. And
that’s what they were trying to get with the station managers, people that were well known and trusted and liked and people felt like they could ask them things and get a decent explanation.

Question: What made you personally want to be involved in the program?

Jack: It sounded like fun and it sounded interesting. The people that came to interview me were very, very nice people. The people I originally interviewed with were Bruce Church and Nate Cooper, just the greatest people in the world. They were very honest and very up-front. And it sounded fun, it really did. I was really glad to be a part of it.

Question: What do you think the program brought to the community?

Jack: I always felt like the program brought a sense of trust. It was not DOE or EPA or anybody else telling them that this was the way it was. It was a person who lived in their community, was educated, understood radiation, understood all of these things and could talk to them. And lived here, not in Salt Lake and not in Nevada and not in Washington, D.C., but lived here where they lived and had lived in southern Utah all their life. I thought that was a great thing. Trust was the biggest thing I found.

Question: How have people in the community demonstrated an interest in the program and, I guess, that’s probably for the earlier years, more than it is now?
Jack: A lot of phone calls, a lot of public interaction. I spoke to the Lions Club. I spoke to the Elks Club. I spoke to the Kiwanas Club, the Lady Lions, a whole bunch of church groups, and schools. There was a lot of interest. I was very, very busy, particularly during those early years. It got to a point where it was almost a dog and pony show. I think they got a lot out of it because all those people knew me. I wasn’t some bureaucrat who was telling them this. I lived with them. I taught their kids. I had a family, too. And I felt like that was really important. There was a lot of interest, especially in the early years.

Question: Were there any public meetings in those years?

Jack: Yes, we had public meetings in almost every community in southern Utah and a lot of Nevada. In southern Arizona, I remember attending one in Kanab one night, Fredonia the next night. I was teaching and they called and said, you know, come on over, there’s a motel room, you can stay over. But, I couldn’t do that, so, I drove both nights, both days after school and went over to the meetings and I had to come back because it was during the part of the week where I was teaching and I couldn’t stay. But in Pine Valley, Veyo, Gunlock, Cedar City, St. George, Washington, practically every community you could think of, we had at least one town meeting and sometimes there was more than one.

Question: Do you remember any of the questions that people asked?

Jack: Yes. They were always the typical questions about radiation deaths and concern about underground testing, which was still going on, and concern about fallout still coming this way
and what the station had found out and what possible/potential problems there were. I know there was great interest when Chernobyl happened because that was honestly the only time I ever saw that station readings jump. It jumped considerably, and it happened two or three different times as the cloud went around the earth. I remember the first time, I can tell you right to the day it passed over because that thing jumped fairly high, not horrible, but a lot higher than we had been. It was a definite blip on the radar scope at that point in time. That one gave me an awful lot of confidence that the station worked.

It would tell you if there was a problem because we really did see it. I was absolutely amazed that the cloud was that high and yet there was that much radiation coming down and we actually detected it. I saw a pattern once that someone had made. I think at DRI, I’m not sure, and you could see station by station by station where the cloud was going. It was amazing. It was interesting because you could literally see it come across the country just as the stations pick it up.

Lynn Karr: I know we turned on all the air samplers and all the stand-by samplers across the United States that we had at that time.

Jack: Yes, they all came on, hadn’t done for a long time either, using the stand-by. So that was impressive and I had a lot of people ask about that. There were more people going out and looking at the station than I thought there were because I got phone calls about that. Because of the newspaper and because of the contact I had with the Federal agencies, I sort of knew when it was going to happen because they had already tracked it. I was surprised at how many people went down and looked at that little chart.
That was really the only thing that you could interact with, I mean, the numbers. Everything else was samples that were picked up, analyzed, and then data were published and we kept it on a little chart. Even though I’m not sure a lot of people understood it, they understood those numbers and they understood that they always ran at this value. And if it went up from 14 to 50, there was more. It was kind of funny. We had sun spots and it would climb a little bit; I’d get phoned, “what’s the matter, what’s going on?” Well, there was a lot of public interaction. There were a lot more people looking at the darn thing than I thought there would be, quite frankly. I was a little surprised about that.

Question: Was the station always at Dixie College?

Jack: The original station was on the parking lot at Dixie High School. I was teaching there at the time and they wanted, of course, high profile; it’s a very busy street. They wanted a lot of people to see it. They wanted it to be very visible. So we put it on the corner of a parking lot. It was moved to its current site for a couple of reasons. One was that Dixie High School expanded and wiped that portion of the parking lot out. There used to be a little house where it is down there now (on Dixie College campus). And they tore it down and planted grass. So, I went to Karl Brooks (Karl was academic vice-president at the time) and asked if it would be okay if they put it there. They said yes and it’s been there ever since. They were talking about moving it a while back.

Question: Why do you think your community was chosen for the monitoring.
Jack: Well, I think, it’s fairly obvious. We were *numero uno* downwind. And there was a lot of controversy here. There was Dr. Land’s report through the University of Utah and various other kinds of things that had pinpointed St. George, and there was the thyroid study and there were a few other things that had happened. St. George kind of became the middle ground. We were more populated than the other areas. There were more people, hence, there was more interest. So, Cedar City and St. George were obvious to me for stations. Milford, yes. Beaver, Filmore and that area, no. That was not an area of concern. But, St. George was obvious because of the cancer, because of the thyroid studies, because of a number of studies that had come out at the time. There were a lot of books that had been written by various people. It was just totally obvious to me why it was St. George.

Question: How is having the station in your town changed the way people perceive nuclear testing?

Jack: I think, originally, when we were still doing underground testing, a lot of people felt more comfortable about the fact that we weren’t getting the winds blown over and we weren’t getting the radiation levels that perhaps had been there at one time. I think there is a group of people, a number of people, that didn’t trust it, although I think they believed me when I talked about it and showed them things. They still had a huge amount of mistrust for the U. S. government. And as time went on and we had been in the program maybe 12 to14 years and the underground testing had ended and a lot of things had occurred, the interest, quite frankly, has started to decline. You could attribute that to a lot of things, you could attribute it to new people moving in who didn’t know and didn’t care. You could attribute it to “I guess everything is okay,
underground testing has stopped, the site is essentially abandoned for that.” And, I think, a lot of people took comfort from that.

The interest started to wane after about a decade and the amount of times I was asked to appear publicly started to go down. I was busy for about ten years. I mean, it was something constantly. I did interact a lot with the public and I did interact with people calling and real estate brokers would call me and say “I’ve got somebody here that wants to buy a home. They want to know about your radiation, they’ve read the books, they’ve seen the movies.” That started to wane; it just kind of went away. Again, I guess it’s because we got bigger, a lot of people didn’t know; they didn’t care. The history sort of started to be ignored. And, the people that were heavily involved with it in the beginning were getting older and older and there wasn’t so much fuss about it anymore. A ton of things, I guess, contributed to it.

Question: Was there any other kind of testing done in St. George other than the air testing?

Jack: Yes, there was a water testing and a milk testing program over here. I don’t know the history of that, maybe Lynn does. I know it happened because they used to pick up at the dairies up here in Santa Clara, in Washington, and, I think, Gunlock and up through that area and maybe even up to Enterprise.

Lynn Karr: Somebody right over here in Santa Clara with the family milk cow.

Jack: Yes, there were several family milk cows. There was water testing done. There was some testing in the early days on the fields up in Enterprise where the hay was raised. There was a
concern about it getting into the food chain. There was considerable amount of testing. In fact, there was a point in time when they were going to ask us to start doing water testing and that never really got off the ground.

Lynn Karr: You wore a TLD?

Jack: Yes.

Question: That was my next question about whether or not you had gone down to Las Vegas for any of the physical testing or done any of the body counting?

Jack: Yes, I did. When Anita Mullen was running the counter down there, I went down, I think, every year for a while. Every year they’d scan you and every other year they would do a blood test. I think I probably had that done five or six times.

Question: Did they test your family members as well?

Jack: Yes, they did. My kids were really young. My wife was tested. The kids were pretty small. I don’t think any of them were tested. We’d go down to the basement of the EPA building there and be tested. I’d go down in the summer and that was cool, make a shopping trip out of it. Yes, I was tested and I did wear a TLD constantly. I always had it clipped to my belt. They went in quarterly. Lynn, do you remember? Or every month?
Lynn Karr: Well, they went in monthly and then it shifted to quarterly.

Jack: That’s right. It was monthly because I used to leave it at the station, and when the route person came through, there would be a new one. That’s how we did it, then it was quarterly.

Question: When did all that stop?

Jack: I still have a TLD that was never picked up. So, I don’t know. They stopped bringing them around and I don’t remember the year.

Lynn Karr: It was in the mid ‘90s sometime.

Jack: The readings were so low that they decided this was kind of silly and that ended. Actually, the one I had, I think EPA gave me because I used to use it as a demonstration to kids in my physics class when I talked to them about what a badge was. But I carried one forever; it was just a part of me.

Question: How was having the monitor be someone from the community made a difference in the effectiveness of the program?

Jack: I think the biggest thing, again, was the fact that I was here, I was raising a family here. At least there was some semblance of trust that wouldn’t have been there if it had been a guy standing there with DOE on his shirt.
Curt Walker, Station Manager:

Question: How has having the monitor be someone from the community made a difference in the effectiveness of the program?

Curt: Oh, it makes a big difference. I think this area is generally full of people who are fairly mistrustful of big government, very conservative, extremely conservative, more conservative than any other place in the country. And, I think, having local people who are not really perceived as government agents managing the station and sending in the raw materials data collection. I think it’s the way to go. I think that, people who understand how it works realize, there’s not much chance for horrible big brother or big government to be duping us and fooling us with perversion of the facts or perversion of the data.

Question: How did changes in stewardship of the program affect you?

Jack: I was there all through the time of EPA and DOE. DRI was always involved but they didn’t run it. They took care of all the various meetings and what have you that we had. The guys from EPA were running the stations. DOE was funding it. I was with them, I guess, about to the point where DRI took over.
Question: Would you talk about the early years of the training that you received?

Jack: It was interesting. Every year for a long time, we had just a dog and pony show, we used to call it, for those of us who have been with the program. I had an advantage. I was a physics major. When I went to the University of Utah for this training, there was nothing new. I’d always get the high grade on the quizzes. And I’d always get the high score on Gary’s little tasks. I had a great time with it because it was no sweat to me. We used to call Gary’s presentation the alpha-beta-gamma dog and pony show. Because, after about five or six years for those of us who had been there a long time, it was a real sleeper because it was the same thing, same stories and same everything. We used to kid Gary about it.

Later on, he did bring in some new things. He brought in some graduate students that we have in the program. And, quite frankly, we listened to an awful lot of very interesting presentations from people in all walks of life, both pro and con. And they were fascinating. In most cases, the programs were set up pretty carefully. When I finally reached the position where I was in charge and I was doing the training, we would sit around the table and figure out what the summer session would be; who was going to be there. I understood for the first time how tough that was. You didn’t always get who you wanted and didn’t always get the information you wanted. The person was busy and sometimes they canceled at the last minute.

There were a lot of things that I didn’t understand from the administrative point of view. Kelly Bringhurst and I became the head trainers and suddenly it became very obvious and very evident. We had some fascinating people from both sides of the aisle, and some very good training. We finally reached a point where the new people went to the dog and pony show and
the rest of us went to another component and that worked a lot better. But, the training was
good. Gary was good; he was funny, a very knowledgeable guy, sharp as a tack and had a lot of
insight and worked hard. I’ve talked to him since I’ve left and I still consider him a good friend.
I know he was a little bit bitter when he left but I think he’s still a good friend. I like him. It was
great. It was wonderful. Occasionally, you’d get someone who didn’t understand the audience
and you’d want to say, “well, there was a wasted half an hour.” I think it was difficult for a lot
of people when they got in there to understand the level that these people had been trained to. It
was always good. I don’t remember a summer session or a two-day session in Vegas or anytime
that I didn’t just enjoy.

Lynn Karr: In those early days, too, you had Brian Head in the summer and you also had the
January training, didn’t you?

Jack: Yes. We used to do it twice a year. We used to do Brian Head in the summertime and
Vegas in the winter. The one in Vegas was always maybe three days and Brian Head was
always a week.

Question: Do you think there’s value in having all of the monitors get to meet everybody from
the various communities?

Jack: Absolutely. Yes, I do. I hope I don’t get myself in trouble here. I’m just going to say it, I
won’t use any names. Until certain individuals retire from DOE, the program was basically
turned over, well, I’m sorry, there’s no other way to say it, to bean counters. The strength of that
group was that we were a family. We knew each other’s kids. I remember the one year that Dell Sullivan’s wife almost died, she was just as sick as could be, and everyone was just sick and concerned about it. They were sending cards and phone calls. You get that if you gather those people together. Yes, you can take the trainees and put them in a meeting but, if you want a family scenario, you get to know everybody. You get to know their community. You get to know their concerns. You get to know their kids and the problems they’re having. You become a big extended family and that, to me, at that point, was a big extended family and I consider everyone of those people to be my friends. That includes the people who work for EPA, and DOE and DRI. There wasn’t one of them that I didn’t consider to be a friend, from Herb Maunu, to these guys, to Nate to everybody, Bruce Church, Nick Aquilina, the Test Site director; you could go right down the list. These people were people that I considered to be friends and it changed; sadly, it changed. It’s too bad but I could sort of see the handwriting on wall and yet, I still felt like it was a worthwhile thing.

When Kelly and I were doing the training, we did it for three or four years, I can’t remember now. We still felt like it was important and we still felt like the direction we went in was important because we had a lot of radiation training and we had a lot of other things. We went into more information that DOE, EPA and DRI would be concerned about, industrial accidents, this kind of thing. This was fantastic training, all the way up to getting into the jumpsuits and load them up with all the gear and let them see what it feels like. I have a company that still does that training here. Those were good times, and the people enjoyed it. It was different and, yet, it was in the same area, in the same field. At that time, the Test Site was being used for various tests, gas effluent and other kinds of things that might happen in disaster training. So it fit in rather well.
But I could see the handwriting on the wall when a certain individual arrived on the scene. I could see the mood change and I could see the feeling change. The Bruce Church idea of what this should have been started to erode. Then you started to lose people like Nate Cooper, Herb, and these people started to kind of drop off; Anita Mullen and the real history of the program in terms of these new managers coming in went away. I recall at one meeting this lady I’m thinking about with great fondness saying, “Well, I read the file, I know the history of this.” And I said, “No, you don’t. You don’t know the history of it unless you were there. You don’t know what we did, what we shared. You don’t know how we felt as a group.” I think the thing that made this unique is the fact that this became a big extended family. I think a lot of credit for that goes to Juana Blackburn. A lot of credit goes to Nate, too, and to Bruce because that was their concept of this and it worked.

Lynn Karr: Juana was the matriarch of the whole thing and she brought everything together every time.

Jack: She was the mother bear. Like I said, when certain individuals became involved, you had a program that was several million dollar program and they started to nit pick. I recall being in a meeting at Brian Head, being asked by this certain individual about our money. If you looked at the total budget they paid us, it’s peanuts. I mean, it was nothing. I remember her standing up and saying, “Well, how much less would you be willing to work for?” And I thought, “this is gone. This is gone right now.” It went steadily downhill after that. Of course, a lot of things were happening, too, because the interest in radiation was waning. Frankly, they were looking at the stations and saying, you know, we’re not measuring anything. The data looks the same for
20 years. Let’s look at doing weather and let’s look at some other things: all kinds of things came out. There’s a lot of factors that contributed, I think, to the kind of decline in the radiation part of it. That was probably inevitable, but I do think that once you have individuals who didn’t understand what this group was, I think the program started to deteriorate. It was at that point in time that I said I didn’t want to be part of this anymore.

Lynn Karr: Well, originally, when we first started doing some of the stations, didn’t you change some of the cryogenics out, too, while you were there?

Jack: Yes.

Lynn Karr: Like filling Dewers and things like that?¹¹

Jack: Yes.

Lynn Karr: You were actually much more involved in the actual physical hands-on stuff.

Jack: Right, I was. Because we were remote, we did more of that than they did at some of the stations closer into Vegas where they don’t do it all the time. There were times, I’d get a phone call saying go do this, go do that, go turn this on, go turn that off, you know, go close this or whatever. Yes, you’re right. I’d forgotten that, Lynn. We were a part of that, too. When we were initially trained, we were trained on every piece of equipment on that stand, everything. And the cryogenic measurement at the time was a real pain. Oh, that was terrible. It worked but
it was the worst system in the world, and then it got better. The newer system they came up with did work better. But we could do it all. We literally did it all. Now, the training, the people who came on later didn’t get that intense kind of training. They kind of showed them this is this and this is this, open this up and write these numbers down and close it. But we got bombarded on how to run those stations.

Lynn Karr: I saw, as a monitor running the routes, you, John, and Rick and some other guys, I knew I could ask, hey, can you do this or you’d come to me and you might want me to check this, or do you have that piece of equipment in your truck.

Jack: Right. The local training was really intense. So we did know what to do.

Question: Do you have any other stories about the program that you’d care to share?

Jack: Well, no. The program to me was a great experience. I was with it almost 20 years and it was a program, when I first started out, I had no clue it would go that long. I liked the program, I liked the people. I made friends with some very, very nice individuals. I got to meet some very, very nice people and I changed my idea of a lot of things from interacting with these people and seeing that they are just another human being from DOE. They are really humans, they do have lives, they were highly trained and knew what they were doing. I thought the program was phenomenal. We’d probably still be with it except for the major differences I started to have with what DOE was doing and I just thought, “you know what, maybe it’s all over for me,
maybe I’ve been here a little too long.” And, so I just said, “well, this is my last year.”
But the program to me was fun, it was wonderful, I met some neat people. I learned a lot of
things about weather, about all kinds of things that I wouldn’t have learned before. I made
associations with some of the best people in the world as far as I’m concerned. As time goes on,
and they start to fall off the loop and retire, I feel bad. I really do, because we were quite a
group.
We were quite a bunch and when we’d get together at that dinner every year, everybody had
kids, they played together, they interacted together and you felt a deep sense of loyalty to the
group but it enhanced your feeling about the program tremendously. I think that’s one of the
reasons it was so strong and so well accepted in some of the areas is you really did feel a sense of
being a part of a much larger group and it increased your interest in your own station and in your
own people and in interacting with your own people. I think that was an important part of the
program that later on, as things started to happen, people missed that totally, they didn’t get that
concept. Overall, I’ve been very glad I was associated with it. I’m very glad I got to spend the
time with it. And quite frankly, I’m quite proud to have been a part of it. I really am.
Tonopah, NV

Station Established: January 21, 1981
Current Status: Active

Current Managers: Mark E. Howard
                  Ted C. Sauvageau

Former Managers: Laurence O. (Larry) Woods

Larry Woods - Original Station

Mark Howard – Station Manager since 1986

Question: When did you first become aware of the CEMP program?

Mark: Well, it was probably back in 1986 or thereabouts. As near as I can remember, that’s when I got started in the program. Larry Woods, one of the original guys that started with the beginning of the program, was asked to get an assistant. I can’t remember exactly why. I think it was because no one else was willing to do it and, so I said, “Sure, I’ll become part of the program.” There wasn’t a lot for me to do at that point in time. In fact, I only checked the station when he was gone, and not on a regular basis, just whenever he was gone, I’d fill in. So that’s when, probably about ’86 or so.

Question: Are you a science teacher?

Mark: Computer science. At the time, though, I was doing social studies and computer science, but I was probably teaching a class or two of Intro.
Question: Do you think that gave you a little bit more of a technical background that made you the most viable candidate?

Mark: You know, it was interesting. Actually, when I first went to college I was a chemistry major, so I have some definite science background, but I think it’s basically that I was the only one who was willing to do it.

Question: Were you aware of the program before he came to recruit you?

Mark: No.

Question: What made you want to be involved with the program?

Mark: It was probably several of the benefits that he explained to me that would happen because I was a part of the program. At the time when I was there, there was still active nuclear testing and so they had a program for the community monitors to be part of the testing to see if we, my family and I, were affected. We participated in the whole body count testing, where basically you go down there and they test you and then they give you money because you came in, and also, we just barely got back from the ranch medical screening process where we got our physical down in Vegas, and that was also part of the process; you’d get a physical, a free physical.

Then they would also pay you to go down at Christmas time and also in the summertime. They had two training sessions, and so you get to go down do those types of things, and you
could get college credit and new teacher hours. I wasn’t really new but we hadn’t been there that long, so it was nice to get credits, you know, and things like that. So those were some of the things and I didn’t have to do a lot, and they paid me a little bit of a wage to begin with, so I said, “Okay, I’ll do it,” because it didn’t seem it would take a lot of time.

Question: What do you think the program brings to your community?

Mark: Now that I’ve been in the program, I think I see a lot better what the program will do for the community. Number one, there is a knowledge that there is not anything, basically, other than background radiation. I think it’s my understanding that this particular station hasn’t seen any excess radiation from any tests or anything, except the Chernobyl disaster, and that showed up. But other than that, it’s showed that there’s nothing, which is a good thing to know, you know.

Question: Were you around for Chernobyl, or was that before your time?

Mark: Yes. I mean, I don’t remember that I was actively checking the station at the time. Seems like that’s about ’86, or maybe even a little bit before, but it’s one of those things. You remember it happening but I don’t remember all the stuff about it. I wasn’t actually checking the station so I wasn’t directly involved. Ever since, when I’ve been doing that, especially since we started splitting the work in half, you see that there’s nothing there. You see the background radiation fluctuate but you understand that it does that because of temperature and pressure and a
bunch of other things that vary, but that it’s just a natural consequence of being out in the sun or across the ground. So the fact that nothing has happened is nice to know.

Question: Did you find out about the Chernobyl spike from talking with Larry?

Mark: Yes. You think about it, a nuclear disaster happens clear around the world and yet your instruments can measure radiation from that, so it sounds like we’re doing a good job. It’s a reason to say yes, nothing has come off the Test Site because we saw that, but we didn’t see anything else.

Question: Do you think your profession, being a teacher, affects how you view the monitoring?

Mark: Yes, I do. You know, we so often, students, teachers, and individuals, accept certain types of data or information from certain sources and not from others. We have a tendency to pick who we’re going to listen to, and it’s been surprising to me as I talk with people. After Larry Woods decided that he would no longer be a part of the program because he had other things that were going on, I tried to get some other science teachers here in the school to take his place, and because it had to do with the federal government, at least one teacher, one science teacher, said, “I don’t want to have anything to do with it. No matter what you can do, whatever they’re paying me, it’s going to be bad data.” He was, I’m going to have to say, so prejudiced against government and nuclear agencies. He wasn’t even willing to look and see. In other words, basically he was cutting off part of his information that was available just because of his own prejudices against what he thought, perceived about other things, and wasn’t even willing to
look at it. He wouldn’t even start, do a year and then say, “Okay, no, I don’t believe this is the right program.” He had dismissed it without any experience. I see that a lot of times. Students come in with preconceived notions or they’re not going to listen to anyone. You get up in front of them and try to tell them something. They just turn the switch off and say, “No, I don’t want to listen to you.” And yet, sometimes it takes a while to get through. That’s one reason that I think the monitoring program has been a good thing. Larry Woods was in the program for a long time and I’ve been in for quite a while and I find that now some people will listen to me, now that I’ve been in the community a longer period of time than when I first got here.

Question: You’re not from Tonopah originally?

Mark: I’m from Overton, actually. I went to school with Nick Bowler. He’s part of the program. You know, I can remember the testing days as a kid growing up down there.

Question: Why do you think this community was chosen for a station?

Mark: Because of its proximity to the Test Site and the things that they were doing. I mean, there was a test out to the northeast. They did the other testing, the atomic testing. The test range is right here. I think they just basically wanted to surround the Test Site with monitoring stations so if the wind blew whichever way, they’d have a chance to catch it and see what was going on.
Question: When I asked Nick why he thought Overton was chosen, he said, “Because Bruce Church lived here.” I said, “Nick, you might have a point there.”

Mark: Well, you know, it’s interesting that both my parents have died of cancer. In fact, there’s a claim pending for my dad for downwinders. He had lung cancer but never smoked a day in his life. And my mom, also. We just needed to get the information together so we could make a claim on hers because she had brain cancer. They were both went down there just after the war and lived there their whole lives.

Question: Nick said there’s a high incidence of lupus there, as well.

Mark: It’s one of those things that makes you look back at what they were doing in the above-ground testing days. They didn’t know. I really think that they truly didn’t know all the things that could happen because of the testing. I mean, they knew it was dangerous in certain respects but I don’t think they realized the long-term problems that could happen. But, talk about smoking and a lot of other things that they didn’t know were harmful. I don’t blame the government because I also see things that I do because I didn’t understand the situation until later. You just look at kids in high school, drive fast and crazy and stay up late and drink and smoke and then they don’t understand that they’re trying to kill themselves.

Question: How have people in the community demonstrated an interest in the program?
Mark: I would really think that in most cases, most people don’t know much about it at all. A lot of this community works at the Test Site, sometimes more than others, so they know the things that are out there and I suppose if they were asked they might say, “Oh, yeah, there’s a station that checks that,” but most of them I don’t even think would know that. It’s one of those things. A lot of people depend on the Test Site for their livelihood so they’re not worried about it because they recognize that they’re being checked and watched for those types of things while they’re out there. At least I assume so.

Question: Do you think they’re better educated about radiation and the dangers associated with it than the general populace might be?

Mark: I would have to say no. But because they work out there, they don’t think about it. Most of the things that I’ve seen as I talk with people and they learn that I’m a part of this program, most of them don’t know enough about radiation, other than that it can kill you, to make an informed decision about anything.

It’s like the idea of transporting nuclear waste through Las Vegas. All the tests that nuclear transportation casks have to go through before they can even say, “Okay, we’ll think about putting this on the road, and then we have armed guards around it so no one’s going to crash into it.” Every day they go through those communities, Las Vegas, Tonopah, wherever; tankers of gasoline and tankers of liquid nitrogen and oxygen and ammonia and diesel fuel and all this stuff goes through, and they never even think about it. Yet, in most cases if the nuclear cask had an accident or someone rammed into it, it’d just sit there. If someone runs into a
gasoline truck or an oxygen tanker truck, the whole thing blows up and they have to evacuate the whole city.

So I think, why are people so afraid of radiation? Because they don’t deal with it on an intellectual level, they don’t know anything about it, and they’re just told that it can kill them and so they say, “Oh.” They think, World War II and the atomic bomb, “We don’t want that here,” and yet, some of the other material that’s going through the communities is more dangerous than that. But they accept that. They use gasoline, they use oxygen. You breathe oxygen in, nitrogen. We breathe it in so they think it can’t hurt us, but it can.

Question: Did you ever attend any of the public meetings?

Mark: Yes, I did. In most cases, the people who came to present did a wonderful job and were very prepared, but you could count on one hand the number of people other than them, or Larry Woods and I, who were there. Very few people came, at least to the ones that I attended, and we’re talking about the late ’80s. In most cases they were very poorly attended because the people didn’t care that much, or they were too busy or didn’t remember or whatever.

Question: Even though testing was still ongoing until 1992?

Mark: Yes.

Question: Has the station been at another location in your community from where it is now?
Mark: Yes. It’s up at the museum now, and it was behind the courthouse. For a long period of time a lot of people would go by that because they were going to the courthouse, but then they transferred everything down to the area north of town and no one would ever hardly see it. It’s been a good change, I think, a change for the better to where it is now, up at the Central Nevada Museum.

Question: How was the decision made for it to be moved, do you remember?

Mark: Ted Savageau and I, as I remember, we’d said, when the courthouse complex was moved, “Nobody’s coming around here anymore.” There are a few programs that’ve moved into the building but it’s not the same amount of traffic that used to be there, and so we suggested the move and they agreed. Then there was not a lot of money to move the station, so, it took a while for that to happen. I’ve probably talked to as many people at the station about what it is, since it’s been transferred in about six months or so, as I had the previous ten years.

Question: What kind of questions do you get from these people? What kind of comments do they make?

Mark: Well, a lot of them ask about the weather. Even before, and now we have a lot of the weather information, but originally there wasn’t a lot of weather-related information that you could do except for the barometer. Didn’t have temperature. It had wind direction but other than
that it was just a barometer and wind direction and wind speed, but now it’s got temperature and
dew point, and a bunch of other stuff. Still, a lot of people will say, “Oh, what’s the weather?”,
you know, and so you explain to them that we’re monitoring radioactive elements in the air, and
they say, “Ohhh, scary,” and I said, “No.” Then you have a chance to explain it, which I think,
really was the main point of putting it in a public place, so that people would ask questions and
you could tell them things.

Question: How has having the station in Tonopah changed the way people perceive nuclear
testing, or has it?

Mark: I don’t know that I could say that it’s changed the community’s view. Again, like I said
before, a lot of people are involved in the Test Site in various ways and so their attitude hasn’t
been one that would perhaps need to change. I think perhaps that the person whose attitude has
changed more about it than anyone else would probably be my own. Not that I was necessarily
against nuclear testing before, but I think I understand it a lot more now than I did.

Question: Was any other kind of testing done here, water testing or milk testing?

Mark: Yes. Every year they come up and do water testing. In fact, it seems like they just did it
in the spring, the water. They test for the water, and areas around a lot of the ranches where they
have milk that they do those tests, and I don’t know if they still do but they used to.

Question: Has anyone ever asked that the station be removed?
Mark: No. Not that I know of. I’ve never had anyone tell me that we ought to or suggest that we ought to remove it, no. In fact, most people that I’ve talked to say, “Well, you’re checking the station. So if you leave town, then I need to leave town, too,” and I say, “Yes, if I decide that I’m going to go down because there’s a problem, I’ll let you know.” So the idea is that, in many cases, I think that there is a lack of worry because there is a station there and they know the people who are monitoring it, so they don’t worry about it. They’re not concerned with it, you know? If you said we’ll take it out, they probably wouldn’t care one way or the other but I think it’s perhaps in the back of their mind. They know, “Well, it’s still there and Mark is still there and Ted is still there, so we’re safe.”

Question: How has having the station manager be someone from the community made a difference in the effectiveness of the program?

Mark: I think it’s probably all the total difference, really, even though there’s not that many people that actively come to the station. Perhaps the web site that they have might tell a different story about the number of people who get on line and check the weather. But those people who have contacted government leaders, as we have talked with them in the past, know that it’s there and that we are monitoring it. Whereas, if you had someone who just came up and checked it every once in a while or did it all by telephone or the Internet or satellite, I think they would have a tendency to say, “Oh, they can do that, make that data say anything they want to.” If someone in the community is actually checking and sending the information in, at least the backup of that, I think it makes a difference in the way they perceive the information, that it’s actually valid.
instead of, “Who knows? We never see it. No one ever can tell what it is because, who knows.”
But they would ask me and I would say, “You know, since ’86 I haven’t seen anything, and I’ve
checked it, you know,” especially the last ten years or so. So I think it does make a difference.
It’s important to have someone in the community do the monitoring.

Question: How have the changes in the stewardship of the program affected you?

Mark: Actually, I haven’t really noticed a difference. Probably the biggest difference that I’ve
noticed over the years is the reduction in funding. In other words, when I first came into the
program we had a three or four day training in December and then a week-long training in the
summer. It increased slightly this summer, but a few summers ago they didn’t have summer
training at all. They skipped it. Now they’re talking about perhaps expanding a little bit. So
that’s the biggest thing that I’ve seen, the change in the budget and the amount of money that
they have for training and getting us together to talk to each other. I haven’t really noticed that
there is a major difference because different person is the head of the program, or EPA or DRI.
Because, in most cases, the main liaison that we have as community monitors has always been
DRI. If we needed something, we called DRI.

Question: We were talking about the training a moment ago. Have you found the training
valuable?

Mark: Yes, I have. Like I said, the inexpensive college credits that they arranged for us, which
have always been nice. I’ve never had to, since I got in the program, go to school in the
summers just because I had to get my recertification. There’s always been enough over the years that I’ve done that. Also, I think probably I understand the nuclear testing program and radiation and its effects, even the Yucca Mountain thing. I’m a much better informed person because of that, which also helps in the classroom situation, because those things come up. I would say probably that the biggest benefit that I’ve seen is my own knowledge and understanding about things nuclear and the programs that are going on in the area of Nevada.

Question: Well, do you have any other stories or comments on the program that you’d care to share with me?

Mark: One of the other things that has been a benefit of the program for me is, the word that people use now, is “networking.” In other words, I know people in various communities around the Test Site entering into Utah and southern Nevada, all this area, that I probably would not have met and gotten to know as well as I do because of the program.

Also, the connections that I have in the federal government, DRI, they’re people that I could say if I have a problem I could call someone, and I feel confident that they’d talk to me. Or they would at least send me to someone who would talk to me and listen to me and that I could be heard if I really needed to, because of the people that I’ve known and talked with, throughout the period of the time I’ve been involved with the program. In many cases, if I had a problem concerning radiation or knowledge, I know people that I can call who would give me information and send me a package that, if I wasn’t with the program, I don’t think I would feel confident that I could get. You could go on the Internet now, but sometimes you have to question some of the information that you get on the Internet.
These are people that I know who are in the industry, that have credentials, that have a scientific background, that would give me good, solid information that I could count on. It’s a valuable thing.

The program has also done some things about information that’s not always just strictly nuclear. For example, for a long time, because it is a hazardous material, they gave us HAZMAT-type training to give us an understanding of some of the things that were happening. I think one of the things that was interesting to me was to talk to and listen to stories of people who had been in the nuclear industry basically since the end of World War II.

They were part of the testing and they could tell you some stories that were very interesting. When we talk about safety today, you say, “Ohh!” They say, “This is the way we did it.” They did not know and they were learning and part of the program of testing and going through it was to learn some of the things that they needed to prevent or to avoid harm. One of the other things I thought was very interesting in the beginning of the program, when the testing was still going on, were visits to the Test Site. It wasn’t as easy to get onto the Test Site and it always seemed to be about every three to five years they’d give us a tour of the Test Site, especially during the winter sessions.

I’ve been in Yucca Mountain and the other tunnels that you get to go down and see. In some ways you understand a little bit better about the amount of money that it costs to run some of the programs that the government has, because you see all the infrastructure that they built, plus the effort that they have to make to keep it safe for us and protect us while they’re doing these tests.

In many ways, not part of the nuclear testing but the CEMP program, you may have heard it referred to kind of as a family. It’s been kind of like that, a large extended family, and
the training sessions became almost like a family reunion where you get together and do things that we always do. We used to have, instead of the barbeque like they had, it was more of an outing to a different place. Then they had someone come in and cater a big steak fry and you’d just sit around and talk or visit with all the people you hadn’t seen since the last training session. We’d talk about their kids and what they were doing and how your stations were going and all kinds of things like that; what was happening in the communities and you’d find out what was happening in the areas that were prone to vandalism or graffiti at their stations. I’d say, “Boy, I’m glad I’m living where I am. I don’t have to worry about sometime coming to my station and seeing half of it lost or broken.

Another thing is the fact that most of the people who are in the program stay. Yet, we’re all getting a little older and I’ve talked to some of them, and as their kids get a little older, the kids don’t want to come to the meetings, the training sessions. For me, that’s never been a problem. My kids still want to come. In fact, my daughter came this year and last year and she brought my grandkids. They said, “Oh, do we get to go to Brian Head this year?” My son didn’t come this year because he got married, but he had planned to come and just be up there with us even though he’s in college. They’ve always enjoyed coming, being there, and being a part of the program. So, it’s one of those things that, like I say, it’s like family. It really is.
Ranch Stations
______________________________
Medlin Ranch, NV
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Steve and Glenda Medlin at Medlin Ranch

Question: How long have you had the monitoring station here?

Ms. Medlin: I don’t know.

Question: Do you know? (asking Ken Giles)

Kenny Giles: Just about as long as the Medlins have been here, I think.

Ms. Medlin: That’s what I was going to say. Quite a while.

Kenny: I’m not sure when you guys moved in here.

Mr. Medlin: ’73.

Kenny: Yes? Probably been here just about that long.

Question: So you weren’t here for the above-ground testing?

Mr. Medlin: No. No, we moved here in November of ’73.
Question: Were you aware of the environmental testing program before you got the station?

Ms. Medlin: Yes.

Question: And they approached you to put one in here?

Mr. Medlin: Yes, one of the guys, I can’t even remember his name.

Kenny: Frank Reid?

Mr. Medlin: No, no, it was another guy. We always called him “Turnaround” because he’d always just pull right up here as close to the door as he could get. He was an older man at the time, but I don’t remember his name. He’d holler at you from the door. He would never get out of the pickup. I don’t remember his name at all. He honked his horn. Honked his horn.

Question: So that was an EPA monitor. You were maintaining the station before DRI? (To Ken)

Kenny: Oh yes, for years.

Question: What did you think of the station? Were you briefed as to what it was going to do?

Mr. Medlin: Yes, but we didn’t pay any attention to it. They came and did their thing whenever. We never paid any attention to it.
Question: Were you concerned about radiation as underground testing was still ongoing?

Mr. Medlin: Didn’t bother us at all.

Question: Were you involved in any of the milk or water testing?

Mr. Medlin: I think they did test our milk a time or two when we had our milk cows. I think it was Frank Reid that did that. Just a couple of times he did.

Kenny: Then we used to check your water. I don’t remember who was doing that, the water samples, maybe Dee Donithan.

Question: Did you ever see any of the results from any of the sampling?

Mr. Medlin: Yes, they’d tell us. They’d either say it’s fine or whatever, so we never had any problem out here.

Question: Do you have any thoughts on the testing or the monitoring that you’d care to share?

Mr. Medlin: Yes, it’s just out there. They told us if there was something we needed to know, and we always had a good rapport with them.
Question: Did you ever have people come on the ranch who would see the station and ask, “What’s that?” or anything like that?

Ms. Medlin: Yes. We’d just tell them it’s a station for DRI and EPA, whoever, you know, at the time. That’s all we’d tell them. Not really too interesting.
The Heizer ranch is in an isolated copse of trees and low buildings in an immense, flat, otherwise bone-dry desert valley ringed by mountains, 40 miles, as the crow flies, from the nearest neighbor and up to two hours drive to the closest paved road. Michael Heizer, the artist in residence, is a world renowned painter and sculptor.12

Concerned about the underground testing, Mr. Heizer’s first wife, Barbara, requested that a monitoring station be installed on the property where it has been, with various equipment, since the early 1980s.

Heizer led the 1960s, ‘70s movement of Environmental Art or Land Art or Earth Art as art moved out-of-doors. His projects included moving mountains of dirt and blasting tons of rocks to create what became the archetype of what Heizer calls “un-sculpture” or “sculpture in reverse” utilizing the concepts of negation, duration and decay.

Upon arriving at the ranch to maintain the station, Ken Giles is greeted by a large pack of dogs who now know him well. There are dogs, cats, horses, sheep, cattle, and machinery everywhere: loaders, road graders, tractors, manure spreaders, horse trailers, and concrete mixers. The ranch is a working farm combined with an industrial construction site. Mr. Heizer is seldom in evidence, due in recent years to ill health.
and a natural inclination to reclusiveness. The station is maintained weekly by DRI with the condition that Mr. Heizer’s privacy be protected. The Complex I station remains an important piece of the monitoring system.

Another view of “City.”
Norman Sharp at the Sharp Family Ranch

Question: When did you become aware of the monitoring?

Norman: EPA put out the TLD and then they put the air sampler in and had us change the filters for a period of time and then they put the other equipment with it. Of course, they had to have a technologist, you Ken, or somebody, to take care of it. Then, they started taking care of the air samplers. They have had this station here forever and ever.

Question: Were you here for the atmospheric testing?

Norman: Oh, yes, we saw the clouds and felt them and breathed the dust sometimes. There was one point in time, the air was so dirty that they sent a monitor to each ranch to make sure that we were OK. One of them was so dirty that you couldn’t see a stoplight in Ely sitting underneath it. It was filthy. But, they admitted in fact, I got a letter from President Eisenhower that said, “This is war and we have to lose a few people along the way.” They did a good job of public relations and built the confidence in most of the people. I don’t have any problem with it now, with the Test Site or anything in it, disposal of their waste there and anything else, to be honest.

Question: Were you involved in any of the water testing or the milk testing?

Norman: Yes, ma’am. All of it. Tested the water and the milk. I sampled the feed the cows ate. They came and sort of picked through it and got what they wanted.
Question: Did anybody ever get back to you with results of any of those tests?

Norman: Well, I suspect that there was some misinformation with this, in fact, because they would send a letter form and they would say that you picked up so much radiation. But you weren’t hurt, because the background was more than you are. I don’t think the background radiation has a damn thing to do with how much is in my system. It’s how much is in my system; maybe your system or my system are not the same. The tolerance is not the same in every person. I think, some of that information is very misleading. But, they’ve got, I would say, well over 30 years of data on me personally. Who am I to dispute that data?

Question: Were they doing medical testing on you?

Norman: It’s the same physical that they required of personnel that went to work at the Test Site. It’s supposed to be the same, identical.

(Ken Giles of DRI participated in the interview.)

Ken Giles: Yeah, the Public Health Service had some doctors stationed in Las Vegas and they would have them come in and they would give them a complete physical, EKG and all. Then, they would go into the whole body counter and they would be counted. They did that with a lot of people in there. They did these guys and they did the Uhalde’s for a while and they did damn near everybody in the area for a while.
Norman: They had Indian Springs, Beatty, Tonopah, Twin Springs Ranch, Hot Creek Ranch, Uhalde’s and this whole area. They had it well covered with personnel that they monitored.

Ken: They got the same physical that we did. We had to do an annual physical when I worked for EPA to be qualified to wear respirators, so they brought the offsite people in too. And I think they took probably blood and urine samples.

Norman: Everything.

Ken: They’re still being monitored, at least they were in 2002. I guess they’re still doing that.

Norman: No, they quit for a period.

Ken: Four or five years, I think.

Norman: DOE took over. One guy wouldn’t accept it, he didn’t want to work for DOE. They’re like BLM, they don’t want to talk to you. They wanted permission to maintain the machines here. I told him, the original contract said that you would give us a physical and monitor and find out how fast or slow you’re killing us. So, he started the program again. When they switched here to Desert Institute, they continued. When they first started out, the Department of Health, it was every six months.

Ken: Once a year or whenever they think about it.
Norman: Well, no, at the end of August it’ll be three years without a physical. You know how these programs end when the money ends. You’d have to gather the information somewhere. I don’t know how many years it would take you doing a water sample once a year. First, they did the milk sample once a month and then they decided they only wanted to do it once a year and I told them I wouldn’t maintain a cow just to milk for them once a year.

Ken: They started cutting back on that. Like the feed sampling, we used to come out and buy cows from these guys every now and then. We’d take them to the Test Site and check them, to make sure it was okay. They just slowly but surely, cut most of the monitoring out.

When they very first started the testing, they used to get guys to come out from back east for only two or three months at a time. There’s a lot of stories about things that those guys did. There’s a story that goes around about the ghost of Alamo. They had a shot and this guy, the monitor they sent there, put on his “anti-C” clothes, anti-contamination clothes and a respirator and was running around town, while everybody else is just wearing their normal clothes. Somebody said, “What are you doing?” The guy said, “Well, I’ve got all the radiation I can get” and got in the car and went back to Vegas. And, boy, everybody in Alamo was really upset about it because here he was all suited out and he got all the radiation he’s allowed and he bails out. Well, that’s when they started getting the Public Health Service to come in and then they had people like (Chuck) Costa and (Don) James and those guys that were here first. Permanent people here that could establish a relationship with them and avoid that kind of stuff. We never wore any “anti-C”; in fact, we were forbidden to wear them off the Test Site. If it was good enough for these guys not to wear them, it was good enough for the monitors not to wear them.
Norman: There was one guy telling me that the wind blows this way, because if it blows that way, it would blow over Vegas and my family is in Vegas. So that’s really the attitude they had to begin it. It’s all right if we lose a few people, we can just fool them.

Ken: One of the reasons why the desireable wind direction was over where the Rachel area is now is that it was the longest distance you could go with the fewest amount of people.

Norman: You also had the Paiutes’ water supply right in the direct line of it. Contaminate your water not mine attitude.

Ken: Well, their water was mostly covered, it wasn’t an open supply, a well.

Norman: When I came down from the army, Carol and Bill went down to watch them set off the shot. I said I had enough military regimentation and Bill said I didn’t want no part of it. So, I went to a horse show in Tonopah. And there was enough filth at that horse show that it made the horse’s eyes water so they couldn’t hardly see with the filth in the air. That would have been about ’78.

We had quite a few cows and the hide and the hair just kind of peeled off. I don’t know how many, but we had several. I don’t have any problems with them now. That was quite a few years ago because they cleaned it up as fast as they could. They started going underground, too, and that made a lot of difference.
Afterwards, they had the promotional tour and they’d take you onto the Test Site. I think that was a good practice. I questioned if they had the foreign dignitaries, too.

Ken: When we had the farm up at the Test Site, there was some anniversary of Nagasaki and Hiroshima and they brought three bus loads of Japanese people in. Nobody could have a camera on the Test Site unless you had permits. Every one of them had about three cameras on, and they were just taking pictures of everything up there.

Norman: I questioned that they should have been that open with it.

Ken: Well, I think they were pretty careful that they didn’t see anything that wasn’t already pretty well known.

Norman: They probably did that with us too, only we didn’t know it. Costa was the monitor that went with us but he did a good job. He was good at the promotional end of it.

Ken: James and I used to organize those tours, too. We get everybody to come in, and then we’d get a bus, and meet everybody in Rachel, then take them in the back door and they’d spend the night and tour the Test Site and go into town with the Control Point and see the farms and see the Sedan crater.

Question: Is there anything else you want to say about the monitoring?
Norman: I will make a comment that after they started the nuclear program in Nevada, there was an extremely high rate of leukemia and cancer in this fallout area. And you never heard that before that.
Roy Clifford - Stone Cabin Ranch

Ken Giles on Roy Clifford:  Roy doesn’t have a very good working relationship with BLM and the Forest Service. BLM came out here about three or four years ago when they had so many wild horses on the range and told Roy, “if you’ll take a hundred head of cows off the range, we’ll take a hundred head of horses off.” And, Roy said, “like a damn fool, I went along with the deal,” he said, “I took a hundred head of cows off,” and then, he said, “they never took any horses off.” So, he said, “now, I’m short a hundred head of cows, still got all the damn horses,” and he added, “couple of years later they came by with the same deal,” and Roy said, “I told them what they could do with them horses.”
Question: Before you had the station out here, how did you feel about the testing? Were you concerned?

Roy: God-damn concerned.

Question: How did the station come to be on your ranch? Did someone approach you?

Roy: Yes, they finally did that. But before they got the station here, I don’t think Roy Jr. was old enough. He might have been riding a pony, or were you, I can’t remember. They set off a bomb, and we told the kids here that, my brother and I, he’s gone now. They set off this bomb there, and we could see the cloud come up and started moving right towards us, right up this valley. At that time they said that there was only two valleys they’d come up and that was Stone Cabin Valley or Coal Valley. Kept coming and coming and right over the top of a herd of cattle. We had about a hundred head. Started down, and we stopped for dinner. It would just go out to the south. We couldn’t see the cows. We lost part of the herd. Then they come in here and finally got them down here, and I can’t remember who in the hell was running the machines up there at the corral on the road, and I just jumped all over them. “Won’t hurt you, won’t hurt you,” and I said, “Oh shit, it won’t hurt you!”

Well, anyway that was one experience, and then another experience was, we were digging, I can’t remember the year. It was in the fall of the year. Right here by the house, and this cloud come over. You couldn’t see from this house across the way for the dust and stuff. But this wasn’t supposed to hurt the cows. And my daughter and Joe’s daughter all turned up blisters all over their hair. They were digging potatoes in the garden. Joe’s daughter got
diabetes. My daughter has got bad thyroid. It wasn’t supposed to hurt us. Then I had a horse, a sorrel horse, a blood sorrel horse, turn. He only had one little white spot about as big as your thumbnail in the center of his head there, a little star, and he turned appaloosa. You know what an appaloosa is, white spots all over his back.

And the dogs. We can’t keep a dog no more. They all turn cancerous. And we never had a dog cancerous before that. Now you tell me, there’s something wrong here. My mother’s dog died of cancer. I had two female cow dogs; they both died from cancer. Our lion hounds all broke out with cancer. And we never had nothing before that. And hell, they’re cutting skin cancers off of me steady. Though the last two years I haven’t had it. I had a lot of it before. And yet when they come in they said, “No, it won’t hurt you now. It won’t hurt you. Don’t worry about it.”

Question: So you were happy to get the station.

Roy: Yes. Then they put the station here. And one of them, I don’t know which one it was, was on a tape.

Ken Giles: Oh yes, it was like a strip chart recorder that we had and it’d give them a continuous running recording of it.

Roy: And I could watch the drop on it and see what drop it was and then it’d go way up and then it’d come down. But this whole country was hotter’n a pistol. Everything. Matter of fact, the uranium companies, mining companies come and tried to buy up the whole Goddamn mess.
Ken: Yes, John Titus told me he sold a couple of uranium mines to somebody and said they were so damn dumb that they thought they were going to screw him out of all this money. John said, “Oh, you dig a hole about two feet deep and put your meter down there. You won’t have nothing,” but he said he sold a couple of them to some guys.

Roy: It was so hot, you couldn’t turn a scintillator on. We had a scintillator, we were prospecting for uranium, but we knew what the hell the score was. It was nothing. It was just radiation from the bombs.

Question to Roy Jr.: What do you think about the station?

Roy: Ken takes care of it.

Question: Do you ever think about the monitoring?

Roy Jr.: I don’t know how to read it. The one I could read, they got rid of that.

Ken: Yes, I’d forgotten about those old recorders until you mentioned it. Roy’s the only rancher out here that’ll change the air sampler faithfully. He’s the only one we’ve been able to train to do it. Nobody else will. They do it for about a month and then they quit doing it, but Roy’s been doing it for years, and every Monday morning.
Roy: For thirty years.

Ken: Yes, he does it faithfully.

Roy: I never did get that thirty years’ pay.

Ken: Yep.

Roy: Well, I know that it’s safe. That’s the main thing.

Ken: The first time I met Roy, I came out here in July of 1964, and they’d had a Plowshare shot that came right over the valley and over some of Roy’s cows. They sent me up here and they said, “Now, you go up and see the Cliffords and you buy six head of cows and you’re authorized to pay two cents over market price, but don’t tell them what you want them for.” Well, I didn’t know any better. I’d never been out here. Didn’t even know where the place was at first. So I came up here and I talked to Roy, and we were out there on the porch, and he kept me a-dangling for about a half an hour. He wouldn’t tell me whether I could have the cows or not, and kept asking me all these questions and I kept trying to fudge around the answers because I was told, “don’t tell him why you want those cows.” So finally he told me, he said, “Well, I sat here on the porch and watched your damn cloud go right over those cows, and two of your monitors have been in here this morning, and the BLM guy.” Boy, I felt like a damn fool, and so I got back to the office and said, “Don’t ever send me out again like that and tell me I can’t say anything.”
We got the cows. He eventually sold us the cows and we tested them but, I didn’t know any better. But that was my learning experience.

Marg Herndon on Roy Clifford: DOE decided that since I was a rancher’s daughter, I should be the DRI delegate to meet with Roy and persuade him to keep the station at his ranch after EPA left the program. I was scared to meet him after hearing all the colorful stories on how he sometimes greeted government visitors. I accompanied Ken Giles on his ranch route in May 2001 and that’s when I first met Roy. Truthfully, I was a little disappointed when he came roaring into the ranch yard on a motor scooter instead of a horse. He had questions about when and how much DRI would be reimbursing the ranchers for the stations located on their land. The next week I sent him a contract but he told Ken that he still had concerns and wanted me to come out and talk to him again.

Question: The ranchers don’t receive a salary?

Marg: They don’t get a monthly stipend like our CEMS because they are not DRI employees. I figured out a scheme on how to reimburse all of the ranchers. We pay them for land use and electrical costs for running the air samplers. Since Roy doesn’t
have electricity, we reimburse him for the diesel costs to run the
sampler. I pay them once a year.

I drove all the way out to Roy’s ranch to explain the
payment plan and we reached an agreement. Then we spent about
an hour in the corral with some of his horses. I petted each one
and learned their names. By that time, Roy and I were friends and
I am very happy to have had the opportunity to meet the infamous
Roy Clifford.

Roy: They used to say, “Going to be some activity.”

Ken: Yes, they came out and they said, “We can’t say there’s going to be a shot anymore.
There’s going to be activity.” And I said, “Well, what the hell kind of activity do you think they have?” Joe Emerson used to have a turquoise mine up there by Warm Springs. I told him that. I said, “I can’t tell you there’s going to be a shot anymore, Joe, it’s going to be activity.” So I go up there and see him and he’d say, “What the hell are you doing here?” and I said, “I can’t tell you. It’s a secret.” “Oh. Well, what time’s the secret going to happen?” and I said, “Well, about eight o’clock in the morning.” “Aw, you didn’t tell me nothing.”

Roy: I got along good with all the guys. Every one of them. And then they went into the DRI.
That’s what I told them, that I didn’t care whether they changed their personnel or not.
Sometimes you get these personnel, they changed, and then they’re a little odd or a little
different, because one time when they were making these shots here, they were always testing our water. So Joe, my brother, and I used to have hounds. And I can’t remember who in the hell it was. They jumped on out of the car over there by the first house they come by and they run for the ditch. And we had two hounds who were mean. They were loose. They were mean, I’ll admit they were mean. And they bawled, and I knew what they were after and I said, “Get them bastards.” They’re running back to the car, then they come around here and they came up to the porch, and I was sitting out there watching, I wouldn’t let them up. Over there, it’d been all right.

But anyway, they come over here and they said, “We want to test your water.” I told them, “No, you ain’t going to test my water.” “Why not?” I said, “When you can come over here and test our water and ask us if you can have the water, you’re perfectly welcome. When you come in like that and do not ask, no, you can’t have it.” And I said, “You go back and tell your bosses,” I can’t remember who in the hell was the boss at that time, ”you tell them that it was Roy and not Joe, not my brother, but it was Roy run you off here. Now,” I said, “get the hell out of here.” That was it. We hadn’t even come in the fields here and they had augured holes down in the field. Didn’t even know nothing about it till it was all over. Would you appreciate that?

Question: No.

Roy: That’s right. Well, I can get pretty rabid. In a hurry.

Question: Did you ever have any milk tested?
Ken: Polly Huff used to come in here, when your mom was alive. And she used to come in and get water. But I don’t remember you ever having a milk cow.

Roy: You milk a cow and when you get done, the milk, the good milk is traded for used store-bought milk. That makes a lot of sense.

Question: Is that how you did it?

Ken: Well, they used to trade milk. If the cloud’d come over, and the cows had been exposed and they had radioactivity in the milk, we wanted to sample the milk, so we’d trade them, like he said, store-bought milk for their whole milk until they tested clear.

Roy: Didn’t make sense, did it? Good milk for bad milk.

Ken: After a few days then it’d be safe to drink their milk again. And like Uhaldes Ranch, Helen was telling me one time that they had a big garden and then the cloud come over and they told them not to eat anything out of the garden. And they’ve never had a garden since out at the ranch.

Roy: You could see that cloud come up straight over that peak over there, when they’d set a bomb off. Come right up and then right over here. When it come this way, we’d get fighting mad. I always told them, there’s only one thing I want to see happening. I said, “I want to see one of them bombs go off and the wind’s coming our way,” I said, “I want to see the wind
reverse and go right straight back over Las Vegas.” Then they would have stopped that bullshit.

We were the guinea pigs. Course they haven’t had no bombs lately.


Roy: It’s just plain b.s. You wouldn’t have minded it if they hadn’t lied to you. “Wouldn’t hurt you.” You know damn well that radioactivity’s going to hurt you. This government, you can’t tell whether they’re telling you the truth or not. No fooling.

Ken: As far as the thing in the old days, they used to be their own worst enemy.

Question: Even though monitoring was done by EPA and now by DRI, does it lose some credibility because it’s funded by the DOE?

Roy: So long as Kenny does it, like I told them, I didn’t want no new guys coming in here. When I took care of the sample, I used to keep it right there on the refrigerator. I never put it in the machine. I’d just set it there because sometimes, it’d get wet or something, and I told them, “Hey, you come in the house, the house is always open, you can go get the sample and take it.” Then they started talking about turning over, I told them, “No.” I didn’t like a stranger. They were strangers, you know what I mean?

Roy: Kenny was no stranger. If you put your trust into somebody, you want to keep it there.
Ken: So you know who to shoot the next week somebody comes up here.

Roy: You taking care of it next week? Aw, I’m just kidding.

Ken: That was one of things that we tried to do at EPA, when we’d get milk samples, like the folks there in Alamo. I used to get milk from them and they wouldn’t be home. Trudy’d say, “Just go in the house and get it out of the refrigerator,” so you’d go in there and you’d get the milk and you’d wash the jug out and leave them the money on the table. People had to trust you and most of the people that I got milk from were that way. They’d say, “Well, we’re going to be gone. We’re going to Cedar City or something, but we’ll milk and it’ll be in the refrigerator. Just go get it.” But, you had to get to know them before they’d do that.

Roy: We did have a couple of cows break out with cancer on their backs. We never had a vet to look at it or nothing but we knew, we see enough cancer in cattle, we know what it is. You probably still get some cancer every once in a while in the Herefords, you know.

Ken: If you had Herefords anywhere that the sun shines, you’re going to get cancer every once in a while.

Roy: Oh, yes. That was a pretty touchy subject anyway, especially when the old man (Roy’s father) was alive too. I guess I take after him. He’s been dead thirty years. When’d he die, in ’68?
Ken: When did Joe die? I can’t remember how long since Joe died.

Roy: Was it ninety, ’89? That’s about all I can tell you. I do know that when the bombs went off, they used to count them off on the radio. We’d sit and watch them through their flights and we’d have to time them. I can’t remember how many seconds it was to where the soft waves would hit here. It was just like that. You’d roll. You’d feel it on the ground. The water in the pond, if you’d be there around the pond, it’d start to slosh.

Ken: That was even true in the underground. The underground ones’d do that too. The big ones. We used to set at Warm Springs or someplace and they would call us on the radio and ask us if we could feel it, and a lot of times we could feel them at Warm Springs. It was kind of funny. It depended on where you were at the time. Sometimes, if you were closer to the Test Site, you wouldn’t feel them. It would just depend on the soil and rock underneath.

Roy: I know one time they set one off and we were over there by the truck and got shook. It rocked the hell out of me.

Ken: What about those ones up at Hot Creek that they did. Could you feel those?

Roy: Yes. We felt them all. And that one at Hot Creek, where they had them wells drilled up there. I don’t know whether they drilled them before the hole. I think they drilled them before they set that bomb off. Anyway, they had artesian water in one. It wasn’t running big but one morning I woke up and looked outside and there was a bunch of cement trucks going to Fish
Lake. They cemented it off. Now, I don’t know what the hell, never could find out what the hell was going on. They cemented that hole off.

And the wells they dug for the MX missile, when they were going to put it in this country here. We couldn’t never catch them, and this one day they were surveying there, right in the middle of our property. Joe had that old car. We fired it up and we run them down. Crossed the road in front of them and asked them what the hell they were doing and they said, “Nothing, just lookin’ the country over,” and we told them that was a bunch of bullshit, and we told them, “You have your bosses sitting down there at the house tonight or hell’s going to be a-poppin’. We’ll go to the camp.” Anyway, the bosses come down that night and we were reading them off pretty good, pretty damn good there, and then they said, “Well, it don’t make no difference. We want to take a bomb and set it off in your field, we’ll just bring the moolah [money] in and give it to you.” That’s when it hit the fan. I told them right there, I said, “The day you come in here to get us out of here,” I said, “your money don’t mean nothing to me.” I said, “It’s just nothing. You better bring the Army behind you because you’re going to be spilling blood when you come around that turn up there,” and I meant every word I said.

And about that time old Joe Sweeney come here and he asked me what the hell was going on around here, all this surveying and I said, “There’s your man right there.” He said, “What’d you tell them?” I said, “I told them they’re going to spill blood right around the corner up there as soon as they started in.” “That’s just the way I feel too.” That was Old Joe, not Young Joe.

Ken: You’d probably get the same answer from him, though.

Roy: Then he proceeded to tell them off. It was a riot.
Ken: But they were going to stuff that down everybody’s throat whether you wanted it or not.

Roy: Yes. Stuff it down your throat. Since then, I have a lot of experience with the government, Forest Service, BLM, AEC, all that.

Ken: It’s kind of funny, I have to kid Don James. He owns land in Lund, Utah. It’s over between Minersville and Milford, over there along the railroad tracks. Well, for some reason Jamesie owns 80 acres of land over there, and they wanted to buy it for MX. And I don’t know what he paid for it, not a lot because it’s just sagebrush, but he does have the water rights on it. They offered him $60,000 for it.

Roy: Oh Jesus!

Ken: And Jamesie said, “I was feeling really good,” he said, “I sent them back a letter and told them, ‘Put another zero on it and you can have it,’” and he said, “About the time I mailed the letter, that MX fell through.” He said, “I should have taken that offer,” because he said hell, it was about ten times what he’d paid for the land. I said, “Yes, I’ll bet you somebody’s got that letter framed up there in their office right now.” He said, “Boy, I really outsmarted myself.”

Roy: Yup. He got that extra zero.
General Chuck Yeager is probably one of the most famous test pilots in history. He is best known for the first supersonic flight in the Bell X-1 in 1947 when he was the first to break the sound barrier.

Ken Giles: Chuck Yeager was stationed out here in Tonopah and he got to be friends with the Cliffords because he liked to do all that kind of cowboy stuff. Yeager wrote a book and he mentions the Cliffords in the book. He used to buzz them all the time in the airplane. There’s one of the trees there, at Cliffords, Roy was talking about wanting to top the tree and he said that Yeager topped through so low that he actually knocked branches out of the tree that fell on the airplane that he was flying in. It’s mentioned in the book about topping the trees at Cliffords’ ranch.
Joe and Sue Fallini’s Ranch

Giovanni Fallini, the grandfather of Joe Fallini Jr., the owner of Twin Springs Ranch established the family’s place 65 miles east of Tonopah in the mid-19th century. The ranch is named after hot springs that emerge from the hills and traverse the rangeland.

Traveling northwest on Route 375, the Extraterrestrial Highway, the ranch is the hub of surrounding grazing allotments covering 663,000 acres with water rights. The Fallinis, Joe, his wife Sue, and their daughters are cattle ranchers.

Public Health Service monitors replaced army monitors in 1953. The monitors stopped regularly at the Fallini Ranch. From that long-term and continuing contact, the monitoring evolved into a full station at the ranch. Ken Giles has maintained that station, first for PHS, then EPA and now for DRI.

The ranch has been in the family for four generations. The Fallini’s experienced both the atmospheric and underground testing periods. Joe recalled, “My dad and mother were smart enough they wouldn’t let us go out when the radiation was real, real bad.” In 1957, Life magazine featured an article on the fallout problem at the Fallini ranch.

Since the Fallini’s were so high profile, they have had both positive and negative interactions with various government agencies. Author Philip L. Fradkin describes the Fallini interaction with government officials. “The Fallinis were highly regarded
by test site officials before Martin’s death.” (Helen Fallini’s nephew, Martin Bordoli, whose
death at the age of eleven of leukemia was considered the first cancer death publicly linked to the
testing.) “In 1955 an army officer visited the Fallinis and reported that they were “intelligent,
sincere, and genuinely hospitable people.”15

Ken Giles recounts a story about government efforts to assess the Fallini’s range as a
possible MX missile site. “When they were talking about putting the MX missile in this area,
they had surveyors come out and they talked to Joe and they said they wanted all his logging
information and how deep his wells were and how much water they pumped and he gave them
all that. Then, they went down there and drilled a well down the road a mile and he wanted the
same information. They told him, “No, we can’t tell you. It’s a secret.” He was really upset
about that. He provided them all the information they asked for and then when it came his turn,
they said, “No.” Then they went and plugged up all those wells they dug for MX.”
Chapter Seven

Public Meetings

Outreach efforts in the early years of the program focused on “Town Hall Meetings.” This focus shifted in the early ‘90s to education efforts in community schools. One of the early annual reports for the CRMP stated the program’s outreach goals: 16

Public Meetings:

To improve public understanding of the program through direct community involvement, a three-phase series of public meetings has been developed:

Phase I: Meetings held in the communities where monitoring stations are located.

Phase II: Meetings in those communities that do not have monitoring stations, but where public interaction is important.

Phase III: Meetings at the original Phase I sites to expose significant changes in format since the original public meetings, in addition to the speaker’s bureau and nuclear science fairs.

The format of the meetings was constantly enhanced as presenters became more experienced and grew to know their audiences. New formats were often presented to the station managers for their evaluation. It quickly became obvious that early presentations were too long. Efforts were made to streamline the information. Careful editing was performed on films that were shown to
reduce time but not impact content. Narrated slide presentations were trimmed. The eventual agenda that became a staple for subsequent meetings ran about an hour, followed by a question and answer session.

After several trial runs, the format and presentations were approved:

The Boulder City, Nevada, meeting was held after additional dry runs were made to refine the format. This meeting took place on November 17, 1983, in the City Hall Council Chambers. There were 17 people in attendance. The consensus among program participants was that the meeting was a success. Plans were then formulated for the remaining eleven sites.

Bruce Church describes how the outreach program evolved:

Bruce: Let me just address what the community response was to the program a little bit. In communities like St. George and Cedar City, we got large turnouts to our community meetings and the community response was very healthy. We went to some communities where we got no response. The only people that would show up to a community meeting would be the Station Manager and their relatives. We went to a number of communities and had community meetings where we didn’t
even have stations. Some of those we got a reasonable turnout to those community meetings and some were so insignificant in terms of turnout we didn’t do very many after that. I would have liked to have seen much more community response to community meetings than we had. At our first community meeting in St. George, we packed the room, the same with Cedar City. Subsequent meetings weren’t quite as well attended, but there were a lot of communities around those two bigger communities where it was really poorly attended. So, it was interesting to see what that community was. If the rhetoric was hot in the community, we got good response. If it was not so hot, there was little response.

Anyway, I had, starting with those early stories, pretty well come up with an opinion of my own that the testing agency had advertently or inadvertently, hidden behind other agencies, as opposed to being out there and exposing themselves to public criticism and being able to talk to people about what the test program was all about. And, I thought they had lost a lot of public credibility by doing that. This led to the convincing of my boss at DOE that he needed to go out there and become the lighting rod for these communities. Other managers didn’t take to that nearly as kindly as Mahlon Gates did, as they were not as outgoing. Tom Clark, the manager who succeeded Mr. Gates, only went to one or two and he wouldn’t go to any more. We started trickling down into the management hierarchy getting Assistant Managers to go. And, we got a few of them to go, but it got tougher and tougher to get a high-ranking DOE official to attend those meetings. Mahlon Gates handled it himself because he was very outgoing, a good speaker, and a friendly guy, and he did really well.

The dynamics that were going on in communities had a lot to do with the monitoring. If there had been zero dynamics, that program never would have started. That’s a clear fact. If there had been no uproar out of those communities and in the local press, I’m not talking about
the national media, I’m talking about the local press, and things being said by governors and mayors (those kinds of people), I don’t think it would ever have gotten management attention.


Since 2000, CEMP has also made presentations to:  
Senatorial candidate Ensign  
Senator Reid  
Secretary of Energy Richardson  
Yuri V. Ushakov (Russian Ambassador to the United States)  
Pahrump Morning Show (TV interview)  
Citizen Advisory Board  
Sierra Club  
Council for Security Cooperation in the Asia-Pacific  

and has been present at:  
Lincoln County Fair  
Rachel Days  
Earth Day  
Delta Utah’s Model Air Plane Show  
Pahrump Harvest Festival
Chapter Eight

Future of the Program

With changing times and national priorities, the future of the program is by no means certain. However, one thing is certain, the technology used will continue to change and improve, providing state-of-the-art information.

Technology

Greg McCurdy - Desert Research Institute

Question: When did you start with the program?

Greg: It would’ve been about 1997 or ’98 that I first got started with it.

Question: In what capacity was that?

Greg: I was mostly looking at what could be upgraded in the system, where the next steps were to go to bring it more modern technology at the time, as well as just what type of instrumentation should be considered for deployment in the field. The equipment was 15 to 20 years old, pressurized ion chambers and data logger or satellite-transmitted equipment. There were a few meteorological instruments, but very few.

Question: What kind of technological changes have been made to the program since you started?
Greg: At the time, all the information was satellite-transmitted. There are still some that are done that way, but satellite transmission's all one way. If any information didn't get through to the system, or the system wasn't ready to receive it when it was transmitted, it just disappeared; it was lost. Since then, all the systems, where it's feasible, have been put on a LAN telephone line. If those that weren't on LAN telephone line at the time were on cellular telephone for the communications, then we are doing the communications every three to four hours, depending on requirements. With it being on satellite, communications could only happen at three to four hour intervals unless they were pre-programmed by a condition to transmit more frequently.

With the telephone and cell phone, we can actually acquire it as often as we want. We can even go on-line and actually interrogate it, and just watch it and see what the equipment’s doing, and monitor it.

Question: Is that real-time data that you would be getting?

Greg: Yes.

Question: How do you see the equipment evolving in the future?

Greg: One of the things we're working on right now is taking and advancing the instrumentation or the communications, more particularly, up to modern technology, which is to put it on Internet DSL connections. Wireless, in some cases, is being implemented. This’ll actually get us to where it won’t matter whether we want to interrogate in real time or not; we can interrogate in
real time. It’s most particularly a cost-effective solution. In the past, if we wanted to interrogate in real time, the phone bills went up very quickly.

Whereas with this we’re paying a flat fee for data throughput; so as long as the system’s working, we’ll be interrogating all the stations every five to ten minutes. In the past, it’s been three to four hours, if you’re lucky. If data didn’t come in from a station, then you had to go out in the field and find out what’s going on. Now we can interrogate it and find out what properties it’s doing right now. Instrumentation-wise, it’s just really an open-ended field as to what happens, where technology advances to and what the DOE and the public wants to have sampled at the sites.

Question: I know you were involved with the development of the web site. What were the goals in setting it up?

Greg: The biggest goal, of course, was to make the data available in more near-real time. Prior to the current system going on-line in 1999, the data were only available at the EPA office in Las Vegas. They did have a teletype that forwarded it out to the DOE facility, but it was on cassette tapes that had to be listened to and decoded, and other than that it was on paper.

The current system’s all electronic. Anybody can get it that has access to the Internet. That was the real goal, to get it to where it was publicly available in near-real-time. In fact, we tried for a long time to get the past data in our hands so that we actually added to it, and we still haven’t gotten that, so we won’t have that accessible, at least not right away

Question: What kind of feedback have you had from the station managers about the website?
Greg: It’s mostly been through the CEMP workshops. Most of them are using it, from what I understand, in the classrooms if they’re teachers. Other interested parties in the communities or outside are using it, from what I understand. They occasionally look at it. We, of course, look at the web stats and see what’s happening, and we see several entities that are not related to the CEMP program that are doing things like frequency analysis of temperature and wind data. It’s obvious they couldn’t really care less if there’s radiation out there. They’re more interested in wind resources and other types of information like that. So, it’s being used quite heavily and widely at this point, from what we can tell.

Question: How do you see the information needs changing if testing resumes?

Greg: With the old satellite system, if they found out every three or four hours what was happening off the site, that’s really about all they had. Once we get all the Internet connections in place, everything on the system will be updated every 10 minutes, so it’ll be real-time access to find out not only what’s going on for them on the Test Site, but what’s happening off the Test Site. That was the big reason we added all the meteorological information, so that they could actually mold it into what they were doing on the Test Site to use in the models, for what the supposed trajectories are. Are the models really holding up on the large scale as well? So it should make it a lot more advantageous for them. They’ll get a lot more information a lot more quickly.

One of the things we’ve always wanted to make sure that’s happened, is that the whole process and the data that we’re collecting is not just a stagnant process, that it doesn’t just
become the same thing over and over again. If a new technology comes out, we’re absolutely going to take advantage of it. If something becomes more cost-effective, we could have put Internet in when we originally started this in ’99, but it was just cost-prohibitive. There was no way we could’ve paid for putting it in. But now, it’s become such a widespread capability. It’s going to be more advantageous to put in a real-time connection than it is to have just a conventional phone line.

We want to make sure that things continue to advance and serve changing needs. The biggest thing I can see about making it available to people in the rural communities is, that as they get access to the information, they can start doing things with it. Several of the communities are using the information for irrigation scheduling and planning. For some of the communities, a couple of the station managers mentioned they were glad we put in soil telemetry temperature sensors.

What does that have to do with radiation? Nothing. They’re using it for planning their planting times and their gardens. But, there are lots of uses and there’s by no reason that this should be exclusive to or directly related to monitoring the Test Site. The capability of the system is beyond that, and so I see it as being a big advantage for DOE to actually develop good public relations, which has been a challenge for them to do in the past. Even if it has nothing to do with their mission directly, with what’s going on at the Test Site. Soil temperature sensors cost 20 cents each. They’re cheap.

As technology like that comes along, I can see that being very advantageous, and in fact we’ve mentioned to a few of the station managers that, if some local project is happening that they’d like to augment with some other instrumentation or have additional information from the current instrumentation, just let us know and we’ll work with them.
Those stations are part of this other huge number of stations that we’re working with, which includes Remote Automated Weather Stations, a national interagency (RAWS) and SnoTel\textsuperscript{17}, all the airport data for the western U.S., as well as other networks that are in the western U.S. It does not have to support solely all the development of all the things we’re doing, and so as we develop for other projects some kind of an application that could be useful for the CEMP, then it automatically receives benefit from that.

The capabilities right now for creating wind roses, or even doing frequency analysis on the information, were not supported by the CEMP program directly. They were more directly supported by the RAWS program for needs that the fire community has. But, at the same time, there are applications that can be done for CEMP. We just rolled those applications over and made them available for those stations.

One of the things we’re starting to explore a lot on a couple of other projects is wireless technology, where a sensor could be put out by the highway and you wouldn’t have to worry about trenching and laying out. In fact, a lot of the micro-wireless technology things are coming out where it’s things the size of a wristwatch that could be set out and then they could send signals back to the main control site and that data can be relayed on through. That’s been one of the reasons why we’ve tried to push the communications capabilities of the stations to be at the level with what the rural area can support.

Campbell Scientific has been very much at the forefront of data information collection. They’ve already got some gear that we’re using for doing wireless locally as well as in some of the national parks. It’s built into the system so if something comes up, it’s a matter of identifying what type of information needs to be collected.
At the workshop, I presented new things that we put on the Web that can be used for either basic data analysis or the teachers can use it in their classroom to expose the kids and have them look at different things. It might be gaining more of an understanding of how meteorological events occur, such as, “How do storms move through the area? What does the barometric pressure do? What does the humidity do? What does the temperature do? What do the winds do?” It’s looking at each of those things, then looking at what are the normal types of things that happen? If an event’s an extreme event, how does that relate to past extreme events? Is it something that’s normal and occurs once in a while or is it something that’s really quite unusual?

There are lots of things that could be done and can be done, be it support for where things are going in the future or including where they’ve been in the past. Because we’re part of the climate center, the longevity is really what we want to see happen. Then we can start getting it long-term, whether it be climate or radiological background or things that are going on in the community, and that’s really the only way to develop and see where small trends are going, whether it be things radiologically based or a lot of the information that relates to global warming or change in precipitation ratings. So there’s a lot happening. We hope the program lasts for decades and decades yet.

**Policy/National Security**

**Troy Wade - Nevada Alliance  Former Test Controller of the Nevada Test Site**

Troy Wade: *The community monitoring systems and the people involved are going to be even more important than they ever were before, particularly in light of the new regulations that give the State a much larger role than they’ve ever had in the past. So is it important? It’s important to the future of the Test Site, whether we*
test or not, it’s super important in light of enhanced testing, and
it’s super important in light of Yucca Mountain. I mean that the
neutrons that are flying across the border of the Test Site don’t
really care whether they’re coming from a weapons test or a spent
fuel rod.

Question: Where were you in 1980, ’81 when the program was starting up?

Troy: In the late ’70s, ’78, ’79 and ’80, I was deputy manager of the local office of the DOE and also the lead test controller, so I was in charge of most of the nuclear tests that took place over that period of time. And it was during that time, as I recall, that several things happened. We were strengthening our EPA ties with Central Nevada (the program that DRI now has), and we were beginning to establish the collection known as the CIC, or now known as the Nuclear Testing Archive.

It was during that period of time that we also established the first community monitoring stations. I think the first one was in St. George, and that was kind of a big deal. I remember lots of discussions about us being the big, bad, evil government that lied to everybody, and we had to find a way to do the program that was credible. Bruce Church and I, and several others talked about how we could do this and we ended up with sort of a basic model that says a high school science teacher will run these stations for us who lives in these communities that surrounded the Test Site. I then left here, I think it was May of ’81, to go to Washington, so the installation of most of the stations happened after I went east.
Question: Bruce Church said that the community monitoring was a model that evolved from the Three Mile Island accident

Troy: That’s right, although my memory of the community monitoring system at Three Mile Island in its early stages is not very positive because they kept getting erroneous readings and panicking, and it took a while to learn how to operate the systems and what readings meant. In the end, we learned a lot from that. That was ’79, I think.

Question: Anita Mullen of the EPA said, “I think it was a good program but I think it was too late.” Of course it started while we were still doing underground testing but the above-ground testing had stopped. Would you like to comment on that?

Troy: I agree with that. I think that’s an example of the kind of thing that causes us, to this day, to always be on the defensive, particularly when it comes to talking about radiation exposures, whether it’s from Three Mile Island or a nuclear test or from Yucca Mountain. We’re always on the defensive, and one of the reasons we are always on the defensive is because of the way we, as a matter of policy, chose to conduct business in the ’60s and the ’70s, which was “don’t tell anybody anything,” and that was a mistake, in my view. Some argue that, but it certainly was a mistake in my view.

Question: How far do you think the program has gone to build credibility for DOE in the communities where these stations are located?
Troy: I think the things begun in the late ’70s and carried on into the ’80s to try and build both confidence and trust with neighboring communities in neighboring counties worked very well for the test program and very well for the Test Site family. I used to be amazed at the EPA people, when I’d go out with them up into Central Nevada, they knew the names of the dogs and the names of the grandkids and they had credibility. We reversed that by using the EPA to invite people from Central Nevada, we’d bring them to the Test Site, host them overnight, give them briefings. I think that we were perceived as people who weren’t honest and straightforward about anything, but certainly to include radiation exposures. I think we did an awful lot to turn that around in my time and then after my time, too. It even got better after that.

Question: Were you ever involved with any public meetings?

Troy: I’ve attended several. Bruce Church was sort of from there and so he had a personal stake in trying to gain back the confidence of the people. He used to stand up in front of that audience, and I’ve seen him do it many times, and, as you know, he’s not a little fellow, and say, “I’m a down-winder. Doesn’t look like it’s doing anything evil to me.” But the St. George audience that I remember was adversarial. Not hostile in the sense that I felt threatened, but they sure didn’t trust us, and I suspect that’s where we started with every community, almost.

Question: What do you see for the future of the program, since there’s no testing?

Troy: Well, there is no testing at the moment, and there may not be any, there may never be any testing. As I’ve said several times over the past year, the world had changed and this President
and this administration do not like the insurance policy that they inherited, and that insurance policy includes a stockpile of nuclear weapons that are getting pretty old. This administration has said, “We want you to go take a look at your capability to do a test and see if you really can, and improve it a little bit,” and this system has done that, and I think that’s a very proper thing to do. Having said that, the community monitoring systems and the people involved are going to be even more important than they ever were before, particularly in light of the new regulations that give the state a much larger role than they’ve ever had in the past. So is it important? It’s important to the future of the Test Site whether we test or not; it’s super important in light of enhanced testing, and it’s super important in light of Yucca Mountain. I mean that the neutrons that are flying across the border of the Test Site don’t really care whether they’re coming from a weapons test or a spent fuel rod.

We’re struggling now with the generation gap, you know. Most people that live in Las Vegas and also the communities that surround the Test Site have the same relationship with nuclear testing that they had with the 1938 Packard: they kind of heard about it from their grandfather and human nature says you always remember the worst things about the Packard, the times it broke down, and so you hear from your grandfather about the clouds that blew across Utah. Success stories like the Blue Bunny ice cream plant in St. George are nice to hear and exceedingly important. You know, I can’t envision a set of circumstances that this country would face, that any President would face, where the country would have to go back to a sustained series of nuclear tests, many of them. I think the best that could happen, or the worst, depending on your point of view, is that we might end up, in fact, I believe we will end up having to do one or two tests, and then maybe several years will go by and maybe we’ll have to do another one. It will be incredibly important to ensure that we do this safely, and it will be
incredibly important to have in place, before that test is ever done, people and systems that interface with the communities to get them to understand what we’re going to have to do as a nation.

Question: The interfacing with the communities in the early days pretty much included just a bunch of white trucks turning up on the horizon and maybe people might’ve been notified that an event was going to occur at some particular time in the future. How do you envision that changing in the future and is this program a part of that?

Troy: Well, again, I believe the program suffered and suffers to this day from the things we did by policy with regard to how and when we disseminated information. This time it’ll be different. Now, I don’t believe that it will be in anybody’s best interest to say, “Hey, we’re going to do a nuclear test on July 8th, 2004,” and give everybody six months to get ready for whatever they choose to do, but I do believe that there’ll be much more coordination with civil authorities and communities than there has been in the past, and that’s quite proper, I think.

Troy: If we had another problem, if we had another Baneberry or had a major prompt massive venting as we liked to call it, I think everybody knows today if we go back to testing and we have a venting, we’re in for big trouble. Being ready for it is more of that insurance that I like to talk about, buying a better insurance policy. If we would’ve had a community monitoring system at that time, it would’ve helped, I suspect, in the sense that you would’ve been able to know with a lot more certainty than was really true at the time whether you had been exposed or were being exposed. It would’ve helped, in hindsight. We’d gotten pretty sloppy at
containment. People tend to get complaisant about the safety systems when they do stuff over and over and over again. I was here in the first days of the underground tests and to have one that didn’t leak was the unique thing in those days. We blew doors across canyons from tunnels, and we just had an awful time, but containment is both a science and an art and Baneberry was a very valuable lesson. Nobody really got hurt. I know people got exposures, but the fact that it happened allowed us to make a bunch of changes that I think protected our program and protected the people of the communities a lot better than they would’ve been without having had a Baneberry.

I feel the same way about the down-winders as I do about all of the Test Site workers who have claimed exposures and illnesses as a result of exposures on the Test Site. This is very easy for me to say, if you can prove that a person’s illness, whether they were a down-winder or a Site worker, was caused by radiation, then I believe very strongly they should be compensated. I don’t know how to explain that to you. I went to work out there in 1958, in the last days of the atmospheric testing, and from the 1958 moratorium until we resumed testing in 1961, I participated in lots of reentries into shot areas. I got some high radiation exposures.

I was shown a photograph of some years or so ago by the widow of one of the Test Site workers who had died of cancer, and it showed ten people in rescue gear at the end of my rescue training program, and these ten people were all suited up in radiation coveralls and had Scott air masks that weren’t on, but the bottles were on us. This lady told me that of the ten people in the photograph, that I was the last of the lot. Now, that’s a kind of a Bruce Church story. You know, Bruce grew up in the downwinds and he’s still alive and I saw some exposures, which in the standards of those days were high, in today’s world would be unacceptable. I’m 69 years old and claim that I’m in reasonable health. The maintenance curve is going up rapidly but that’s an
age problem, not a radiation problem. I’ve read a lot. Radiation effects, low levels of radiation affect people differently, and I’m fine. I have colleagues that I worked side by side with that are dead, and those people, if they can get some competent authority, whoever that is, to say, “Yes, that cancer came from radiation,” then they ought to be compensated.

This nation as a nation has never really done anything in the sense of developing a nuclear capability that our enemies weren’t also working on. From the beginning of the Test Site up to today, a lot of the things that go on at the Test Site are to find out what the state of the art is in the enemy’s camp. If you think about that a little bit, then you have to understand that’s an inherently risky business, if you’re skating on the front edge of technology all the time, not necessarily for your own purposes but to make sure that you understand what your neighbor, what your enemies are doing, that’s just inherently risky and that’s what happened in the atmospheric days. People knew there was going to be fallout, people knew there was going to be rainout, but you couldn’t talk about it because you also knew that the enemy was doing the same thing you were doing. He was trying to understand the U.S. test program. So is that justification for doing what we did? In my mind, yes. In other people’s mind, no.

Question: Is there anything else you would like to say about the monitoring program?

Troy: I’m pleased to have been a part of helping establish what is now the community monitoring program. I think it’s incredibly important. I think it’s probably even more important today than it was back when it was started. I think it will be used again.
Dr. Bruce Hurley - DOE  CEMP Program Manager

Question: When did you start with the program?

Bruce: I started with the Community Environmental Monitoring Program in November of 2000. I took over after Doug Duncan left, and we had a gentleman that also was kind of pinch-hitting at the moment, Bob Furlow. The fellow I took the program over from retired last year.

Question: Were you aware of the program before that happened?

Bruce: Only in a peripheral way. I really didn’t know a great deal about it. It was something that really is partitioned out at this side, at the Defense Program side, and I was coming in from the environmental management side. They have their own receptor in the public with the Community Advisory Board and so they crossed paths.

Question: What are your responsibilities with the program?

Bruce: I’m the program manager for the CEMP, and the CEMP has evolved to be part of my overall job, which is the management of the environmental monitoring programs. It includes the CEMP, it includes the Hydrological Resources Management Program, includes the Routine Radiological Environmental Monitoring Program, which is the CEMP equivalent program on the Nevada Test Site. It’s the complimentary program, the regulatory compliance program for radiological monitoring, as opposed to offsite with the CEMP. And the other program I recently
also added to this group is what they call the Maintenance of Test Capability Geology Program. It’s both geology and hydrology that would support the resumption of testing.

Question: When you first became involved with the program, you knew there was a moratorium on testing? Were any questions in your mind about why we were even doing this if there isn’t any testing?

Bruce: Well, I knew a little bit of the history. Some years back I was in the radiological training business over in the emergency management division and was also the program manager for the Federal Radiological Monitoring Assessment Center (FRMAC). So I knew something about the down-winders and something about the testing legacies. I never had any doubt about why the program was still going on, because of the fallout from the atmospheric testing and the early underground testing, through Mighty Oak in ’86 and some significant underground releases, also. So, I really understood the need for the program. From Ted Hartwell and also from some folks I have known over at the EPA who formerly conducted parts of the program, I learned the history fairly soon after I got on the program. Daryl Thomé, who is a consultant with Keystone, who works with us here and with whom you’ve talked before, Daryl was also one of the people that initiated the program. I know Daryl quite well from the FRMAC where he was my counterpart at Bechtel, at Edgerton, Germeshausen & Grier (EG&G), really, before Bechtel.
Question: In your interactions on the program, have you gone out on the road with some of the monitors and run routes with them?

Bruce: I’ve actually had the pleasure of going on all the routes. I’ve visited all the stations except the new repeater up at Warm Springs, and I’ve been on all the parts of the routes, except Utah and Boulder City and Henderson, multiple times, and so I’m due for another Utah trip.

Question: Have you interacted with any of the community members while you were out on the routes.

Bruce: Well, one of the things that we do when we go out on the routes, or what I do, and I know that my predecessor, Doug Duncan, did, is try to visit the community environmental monitors when we can. Visit the people at the schools, for instance, at Dixie State in St. George or at the high school in Tonopah, and of course the ranch stations. The ranchers are all pretty interesting guys, and those families have been out there since the 1860s. Also, in some places like Cedar City, I visited some of the people in town with the Chamber of Commerce. I visited people who formerly were part of the program like Helen Uhalde and her family who once had the Adaven ranch with a monitoring station there. We also work with the people like the BLM. We have a station on their property in Ely and they like to know what we’re doing. So it’s interaction with different levels of people in the community, besides just our monitors.

Question: Have you seen a shift in the test readiness posture? If so, how do you see that affecting the program?
Bruce: I think, so far that is minimal on the CEMP side, but you can see the running mate of that over on the test readiness side. Dave Shafer (DRI) and the folks over there, where the money also comes from for the CEMP, you can see some stepping up of the pace and you can see some things being put into place. For instance, in our last training session that we had up at Brian Head for the CEMs, we had a kind of a mock session that we would do for a test control panel, and how you make a decision about when would be an appropriate time to test, what the criteria would be, and how the test control panel would go about making that decision. That is something that, I think, opened those folks’ eyes because I think that they weren’t really seeing that side of the business before.

Another thing that I think is out there, as we get closer to the potential of having a two-year readiness requirement (I think the president announced his mission to have a two-year resumption of testing capability), one of the things that’s fairly important to the CEMP is to have good communication with all our stations. The budget’s quite tight but slowly and surely we’re trying to upgrade that capability, to be able to communicate better, real time between stations and the CEMP web-site, and also to be able to communicate that back to our operation here. One of the very important things about the CEMP stations if we resume testing is these are stations that have been in the same location for 23 years, so they have a history and they have an established background, which is extremely important should we ever go back to testing. In those communities, if you don’t have a long background of counting, of checking to see what’s there, you don’t really know what the background radioactivity is. For any slight anomaly, or variations due to the weather, wind conditions, snow pack, there are variations. Without that good long background, sometimes a minor variation could scare the heck out of people when it
was perfectly normal. So this gives us an opportunity to have good information at very important sites, should we ever go back to testing.

Question: How effective do you think the program has been in developing credibility around Nevada and Utah and, for a while, California, within the communities?

Bruce: I think that the program is pretty effective. I think particularly with things related to the Test Site, and the reason I say that is, before coming to Nevada I was at Hanford in Richland, Washington, and the difference in how people surrounding the Nevada Test Site perceive the Test Site, even with the fallout from the ’50s and ’60s, and some of the emissions later from other kind of tests, the community is pretty benign towards the Test Site. Not Yucca Mountain perhaps, that’s a different animal, but towards the Test Site. That kind of surprised me, and the longer I am involved with the Community Environmental Monitoring Program, the more I come to realize that DRI administers this program and they’re a State agency, so they’re not viewed as as contractors or federal government employees. They’re not viewed as direct minions of the government. They’re viewed as something independent. Then a step beyond that, the CEMs are members of the community and they had a pedigree and the knowledge of the background of the community before they became associated, so they’re really trusted agents for the communities themselves. They’re not viewed as DOE people, they’re viewed as community people that keep track of us. And I think that’s good. And the fact that they can actually come out, do their own readings, and tell the people exactly what’s there, I think makes people feel a lot more comfortable. They have some control.
Question: Did you ever have any interesting experiences while riding with any of the field monitors?

Bruce: Well, I’ll have to tell you that some of my favorite people are the DRI’s route monitors. I’ve known Lynn Karr for quite a while, back to the training program, and Kenny Giles back to then, too. Kenny, I remember from the period when I was in the FRMAC program. We had the advance launch support crew in 1997 at Cape Kennedy for the launch of the Cassini spacecraft. Kenny was there and I can remember him was the only jovial guy at three in the morning when we had to pre-monitor. So that gives you an idea about him. He’s a character. Many trips with Lynn, Kenny, and Craig Shadel. Craig is one of those quiet ones. Craig can convey more with a grin sometimes than I probably could with a five-minute joke. He’s an interesting fellow and, I think that when you get this group together they work very well, and I think Scott Campbell fits right in. I think they’re a real good bunch. And of course, Dee Donithan, who is an old hand from the testing side.

All these fellows really bring a lot of good experience to the table, and the one thing they all seem to have is they know how to work with people, know how to go out and deal with the people in the community. John Wooden, the old basketball coach for UCLA that won so many championships, used to have a statement that said, “Go fast but don’t hurry.” That’s kind of how the route monitors do it. They take time with the people. They get their job done and they move through very smartly but they always have time to deal with the people on a personal basis. And I think that that really makes a difference, between those folks and the CEMs, particularly with the ranchers. Now the ranchers sometimes are kind of irascible guys, they’re out there by
themselves, kind of for their personality in a lot of ways and I think the monitors are pretty good with them.

I have to tell you a pretty funny one. I was out with Kenny Giles and, Nevada’s not known for vast oil resources but there’s one field, the Grant Canyon field up in central Nevada, north of Sharp’s ranch station up there in Nyala. The Grant Canyon field has the single highest producing oil well in the U.S., at least for some time. The one well itself was a really wonderful oil well. The rest of the field produces a decent amount, a small field but one great well, and I mentioned it to Kenny, and I don’t know how far we drove down a dirt road, but we found that oil well and I got to see it, the Grant Canyon Number One well. Kenny made sure I saw that, so that was kind of a tour highlight.

Question: It must have been a dirt road.

Bruce: I think Kenny spurns paved roads whenever possible.

Question: If you can get to something on a blacktop, it’s not worth seeing?

Bruce: Yes, if it’s too close to the road, then somebody else has already been there. Lynn Karr’s a little bit that way. I’m always kind of afraid to go with Lynn Karr, though, because every time I go with Lynn, even if it’s in June, it snows on me. So, this time I’m going with him in the middle of the summer.
Question: What do you see for the future of the program? Is Yucca Mountain going to play into the future of the program?

Bruce: I think Yucca Mountain is like the Super Bowl. Despite all the oddsmakers and everything written about it, you never really know who’s going to win in any one iteration of it, and it’s ongoing. When I came here in 1986, I came from the Basalt Waste Isolation Program, which was the equivalent program in Washington at Hanford that had a very well-organized team, very well-versed, but their site was not as good. It was under water, it was an area that had high heat flow, geologic stresses, tectonic stresses. I came down here and worked for Science Applications International Corporation for five years on Yucca Mountain. What do I think of Yucca Mountain? There are a lot of questions that need to be answered probably still, and there’s probably enough information to answer them but maybe it has to be looked at in some different ways.

Unfortunately, I think politics often overwhelms science. I think Yucca Mountain probably would be a pretty good place to put dangerous material, radioactively dangerous material, that has high-level radioactivity. Is it a perfect site? No, because there’s not any perfect site. It has a lot of good characteristics for it, and it has some detrimental characteristics. I think if it’s looked at purely from a scientific viewpoint, at some point in time they will have a repository there. If politics predominates, who knows?

Question: Do you think at some point, the CEMP might move into monitoring transportation corridors?
Bruce: I would believe if Yucca Mountain actually does get to the point where they’re okay for construction, I would think there would be a need for some sort of CEMP monitoring system. If not the CEMP that we currently have, maybe a sister program to it. That monitoring will need to be in place for some years before the shipment actually starts, again to establish a background along the transportation corridor because, for example, some places you might drive over, say, a sandstone, are famous for uranium deposits. There’s a place on I-70 in Colorado near the little town of Morrison where we used to go out and look at what’s called a “roll-front” uranium deposit. It was actually there on the highway. Well, if no one had known about that and a waste vehicle had an accident there, people would’ve probably gone crazy trying to clean up the natural uranium occurrence. So, there’s something like this definitely needed for Yucca Mountain.

Question: Is there anything else you’d like to add about the program?

Bruce: Well, I think that with the CEMP program, one of the difficulties in the time period when we’re not doing nuclear testing and don’t have a lot of really high-risk activities going on at the Site, people tend to want to slash things. The biggest battle I have as program manager is to continue to keep it in front of the radar screen of management. That you need to have a program like this to verify that Nevada site operations are compliant with the law in terms of what we emit, radioactivity, and to reassure the community that there’s nothing either from new operations or from legacy operation that is being deposited in their areas. It’s going to be a necessity for good community relationships for the Test Site, and I think it’s going to be one that’s continuing. My challenge is to be sure to keep the focus of folks on it so we remain
funded, hopefully become even better funded to do a more thorough and scientifically defensible job.

Question: Do you think when Chernobyl occurred, the fact that our station managers could see evidence of the cloud passing was a good argument in favor of maintaining some sort of a baseline as well?

Bruce: I think that is a good point that you can still, I am told from some of your hydrology folks, go out to the springs here in Nevada and do sampling in the vicinity of some of the springs. You can still see the signature of some of the isotopes from the Chernobyl fallout, from the recent Chinese, Indian, and Pakistani atmospheric tests and, of course, lesser amounts of our fallout from back in the early testing days. So I think it’s really important to continue to have the capability to pick things up, because there’s no guarantee that someone will not try a secret test in the future and we would want to know what that signature was that could be picked up. If indeed people were being irradiated, you’d have some idea not only where it came from, but what it was, and it would again be information that would be very valuable to us, especially if we ever again had to resume testing.

Question: Do you have anything else to add?

Bruce: I think the only thing I would add is I enjoy the Community Environmental Monitoring Program. I think it’s a valuable program, and I’m just happy that I got to be a part of it.
Ken Hoar - Director, Environment, Safety & Health Division  DOE

Question: When did you first become aware of the Community Environmental Monitoring Program.

Ken: In 1996. I accepted the position of Director for the Environmental Protection Division. Then a year later they combined both Safety and Health and Environmental Protection Divisions, so that was my first introduction to the CEMP. One of the first things I got involved with was re-examining the whole environmental monitoring program, both what the contractor did (which was Bechtel Nevada) and what DRI and EPA did. So we tasked a couple of teams to look at it, and the first team had made a recommendation. Then we tasked another team to look at it a little more in depth, and they came up with a recommendation, and I finally got dragged into it to put this thing to closure.

One of the things that I found out about the CEMP program, it was a good program, it had great people running it, had great people as the station managers, the community people. The communities liked the program. The only problem was, I was stuck in the middle with trying to funnel money to DRI and EPA, because one of the concerns we had was, legally EPA was doing the work for DRI. They should’ve been on contract but they couldn’t because they were using the federal system, the fed as the middle men, and I didn’t really like that. So, part of the reorganization was to find a kind of a vertical integration of the program, so it went from the feds to either EPA or to DRI.

To make a long story short, we had to go out and do a survey of the people in the communities. Pretty much everybody said that they didn’t trust the federal government, which is no surprise, but they had some trust in DRI, being a State institution, so therefore we made the
recommendation to transition the program over to DRI. This was about 1999 or 2000 that we started to transition in the program, and we slowly phased out EPA. In some respects, EPA was a good partner with us. One of the concerns I had was that it could take up to 12 months to get samples analyzed, it told me that we’re not a priority in their system. So one of the goals was, when DRI took over the program, that when they take a sample, was to have the results back within 45 days. That way, people can see what’s being monitored is being monitored and the data are being provided to the community in a fairly timely basis.

I remember my first get-together with everybody was in the summer of 1996 at the CEMP meeting up at Brian Head. We got together there, and of course I was a new person there and everybody else had been in the program for a good long time, some of them up to 15 years or longer, so it was kind of a unique experience to go through it. A lot of good people worked hard to make this program work.

There’s some of the people, like Nate, Marg and Juana, they were the foundation of the program, and one of their concerns was, with the testing not being done, and we’re in a state of readiness, how viable was their program. I can at least say from my side, on the DOE side, by having the stockpile stewardship management come to these Brian Head meetings or these annual meetings, they’ve both gotten a better idea of the importance of the program and why it works. It’s because of the people but it’s also the voice in the community that we don’t have, and we’re not asking the station managers ever to be biased toward DOE, but just to present the facts and let people make their own determination.

That’s kind of how it started, and it’s been through some ups and downs. I call it the dark years, where when we were trying to figure out which one to go with, either DRI or EPA, but it seems to be going good. It’s one of my favorite programs. It’s also one of my favorite programs.
that I don’t have to really get too much involved with. It kind of runs itself, and I think one of the biggest pleasures I got is doing this book because the history of these people is important. Some of these people are starting to retire and move on and they may not stay in the communities, so it’s important to tell their story.

We did something similar with Native Americans. We documented a book over ten years of the program and it gained a lot of respect for DOE but it also gained a lot of respect for the 17 Native American tribes, that they got their information out there, they got their story told, and so we’ll be doing another update of the book.

But back to the CEMP, it’s been a fun program. It’s been through a lot of trials but it always seems to do well, and our biggest concern with the program now is just making sure it has adequate funding to continue what it’s doing.

Question: When the testing stopped in 1992, was it hard to justify keeping the program?

Ken: When the testing program stopped, it had about three years where we were getting ready to test, and so after ’95 they made a decision that we would go into a readiness mode, and at that point everybody started looking at budgets, and one of the problems again with two contractors is they’d cut a little bit from one, a little bit from the other, and, it just made it more difficult to manage because as a manager you’re looking at “what’s my cost effectiveness.” Well, if I’m paying for overhead for both EPA and DRI and then I’m paying for support, it kind of looks like, you’re paying double for one product, so the goal was to try to streamline it and that’s what we did, and DRI’s been managing it ever since.
Question: When Nate Cooper was running the program, and of course he’s been retired for a while, but his interactions with the individual station managers set a more familial tone, everyone brought their families to the training, and that is a very unusual thing in a government program. It’s not there as much now, I think, as it was in the early years, but you still see it. From a DOE perspective, does anybody think that family involvement has any value?

Ken: I see it and I know that stockpile stewardship management sees it. I just think that the family part of it, when people used to bring their kids, is really indicative of the budget cuts of what’s happened with the program. Because I remember, I think it was ’90, ’92, the budget for the whole CEMP with DRI and EPA was about four million dollars, and now we’re down to about one point three [$1.3 million]. So as you can see, as things got cut, a lot of those little extras that make the program, like bringing your family to Brian Head and having the steak cookouts that we used to have. Those things kind of dropped by the wayside because they cost dollars, and basically the training session got reduced in order to keep the stations open, so that’s probably been one of the downfalls of the downsizing. Now, on the other hand, I think some people still remain friends through the program and I think they will probably their whole lives. But that’s just been an artifact of downsizing, and it’s kind of sad because those are the eyes and ears out in the communities and yet we downsized them to a point where I don’t know if they have fun with the program or not.

Question: What do you see for the future of the program?
Ken: I see the program going up if we get the right funding, which was 1.8 million [dollars] a year. I think at that point, we can start upgrading the stations to where they need to be. I think we’ll enhance the training. But one of the things Nate probably spoke of, or Chuck Costa, was the fact that we used to do a lot of public meetings back in the testing program, and that’s another fact from downsizing, that those things get cut, and so we’re hoping with additional money we can start doing more town hall meetings in order to get the station managers more visible within the community, for newer people moving into the community. I think some of the people living in communities like Caliente that’ve been around there for their whole life, they all knew the station managers, but some of the new people moving in may not.

Question: Why do you think there’s a need to do that if there isn’t any testing going on?

Ken: Well, it’s twofold. One is the EPA let us downsize our compliance-based monitoring because of the CEMP. The EPA looks at that as receptor monitoring around the Test Site in case we have release of radionuclides, either from surface, re-suspension or venting, if we went back to testing. Two is, I think it was just the downsizing and that the meetings cost extra number of dollars, and as the budgets got cut, that thing got cut.

Question: How much interest do you think is in the communities to have meetings about radiation?

Ken: Well, I wouldn’t so much have a town hall meeting like they used to do. I think it would be more like presentations to the county commissioners of what results the station has had over
the last year versus the last 20 years, and so people can see that this really hasn’t had a release. I think it’d be more to the county commissioner venue rather than just having a town hall meeting. I think the lessons were learned. We’ve had issues with town hall meetings because it seems to be one, a complaint session against the government, and two, it seems to be always transitioned over to Yucca Mountain, which we’re not part of. So, it makes it kind of difficult to have a town hall meeting when you get a group of people and all they want to do is talk about Yucca Mountain, and basically we say, “We don’t work for Yucca Mountain. Even though it’s DOE, it’s a different part of the department and you need to talk to those people. We’re going to talk about what we do,” and most people don’t want to hear that. Right now the impinging impact in their communities is Yucca Mountain, which way the rail routes are going to go, which way the transportation routes are going to go, and then of course all the hype about accidents. That’s really what’s on their mind. That and groundwater, the flow of the groundwater, where’s it going, is it contaminated, is it safe to drink, all those things. That really seems to be the two things on people’s minds.

I think the other thing we touched upon was technology. Was the technology available in the early testing days? Was it sensitive enough? We have very sensitive equipment now. If we didn’t have very sensitive equipment, it might’ve all showed zeros. It really was a result of Three Mile Island and it’s been going on since, so I think it’s a good way that communities can see whether we’re doing the monitoring. Actually, the kind of funny thing is once we put the weather station data there, it seems to be the talk of the town, like in Beatty they all go get their mail and then they go look and see what the weather is, so they’ve actually turned it into a gathering place in some communities.
And then, Helen Uhalde up at her ranch, she agreed that if we worked out an agreement that Complex One would have a full cadre of sampling, she agreed to take hers out. Again, you know, if we ever resume testing, I think that’s another one of those target-of-opportunity stations to put in. I think the next one is Shoshone, if we have enough money. Just because of the amount of people moving up in that area. Right now we’ve got one in Ely, which is a good station up there. I think the next one should probably be Shoshone, if we can find a place to put it, because it seems to be that trying to find a piece of property to put it on that people won’t complain about.

Question: That’s the only station that anyone ever asked to have removed, the one in Shoshone. Because of the politics of the community, they thought that having a station there was actually condoning testing.

Ken: Which is kind of sad in looking forward, if they’d have known there are low-level waste shipments coming through their community, they might have wanted to have it there. Right now there are low-level waste shipments going through Shoshone and they have no monitoring, so there you go.

Question: Is there anything else you’d like to add?

Ken: Yes. That’s kind of the program in a nutshell. I don’t see where it’s going to be reduced or eliminated. It’s something that NNSA management at the Nevada Site Office is committed to and again for us to have a continental based testing program, we’ve got to have world class
monitoring with both what Bechtel does and what DRI does. Since my watch, we’ve had Joanne Burrows as the federal manager. We had George McNeill, Doug Duncan, and now Bruce Hurley. I’ve been really blessed to have talented people work with DRI on this program and I see it going down the road, having it there and it’ll be there for a very long time and eventually, if they ever decide to resume testing, it’ll be an integral part of the offsite monitoring program.

Dr. David Shafer  Director, Center for Environmental Remediation and Monitoring, Desert Research Institute

Question: When did you first become involved with the program?

David: I knew about the program before I joined DRI, which was 1999. It was often cited as an example of a monitoring program and I think I’d stopped by and seen stations, like at Indian Springs, when I’d gone out to the Test Site. But I think when I first came on board as the manager of the contract for DOE was when DOE was thinking about having DRI, essentially, take over the management of the whole program. So it was really that first fall I was here that we started working on the proposal to do that. And I think it was spring of 2000 that we started transitioning from EPA to start taking over the program.

Question: Did you have any thoughts about it before you started working on it?

David: I thought it was a good opportunity. When I came on board, our role was primarily working with the CEMs; just in terms of people involvement it seemed like a good opportunity. But it was also pretty clear that the stations were in need of upgrading, that there’d been a lot of
advances, in especially, telemetry of data. It seemed like it’d be a nice opportunity to take a
good program but give it a facelift. I felt like it was a good opportunity for us. Especially that
first year, I ended spending quite a bit of time with that because we needed to bring some people
on board obviously and to figure out what things we should do first, transitioning from EPA.

Question: Because DRI picked up ranch stations?

David: We picked up ranch stations and just meeting some of the people involved with the
program.

Question: Did you go out on the routes that first year?

David: Yes, I did some at least. I’ve never have been on the route to the Utah stations, I’m sorry
to say. I’ve stopped and seen the stations but I haven’t really done the route. At that time, we
also had to make a case for just keeping the program going as well. I think part of the reason
DOE decided to make the change to DRI was that they wanted to try to cut some costs in the
program. In terms of meeting what the objectives of the programs were, they had been in the
process of closing down some stations over the years and we wanted to evaluate what the
benefits were of having stations at certain places.

Question: Credibility has always been such an issue for DOE. How effective do you think the
stations have been in building credibility for DOE out in the communities?
David: I would say it’s kind of a mixed bag for DOE, per se. I think the program itself has credibility. May I back up a second and say, there were some people that were unhappy to see EPA’s involvement largely go away and we actually tried to keep them involved by having them involved in analysis of the samples, and it was just something that DOE didn’t want to do.

We recognized that they had established a lot of credibility with the communities and that it would take us a while to build up that same level of credibility. I still have a level of disappointment that we weren’t able to keep EPA involved in the program in some respect. Of course you know we picked up people like Ken Giles who certainly helped, especially for some of the ranch stations. He was somebody people had known for a long time. I think it does help with DOE’s credibility but I think more than anything the program itself has credibility as something for monitoring for the NTS and just getting information on things that are going on at the NTS.

Question: Since there’s no ongoing testing, do you think the program still makes contributions to the communities?

David: Yes, I do, and part of it is because DOE leaves the option open of resuming testing. The last couple of years there’s been a lot of discussion about being more ready to test again. I think the part of the CEMP that would be the most difficult to reestablish, suppose they decided, we’ll just reestablish the community environmental monitoring program when we start to test again, and we could go out and we could put all the equipment in the field, we’d lose some benefit of not having maintained a baseline of information. The people, though, the people part of it would be really difficult to resurrect, and that’s where DRI’s perception of the program and sometimes
DOE’s perception of the program aren’t the same. Yes, the program has a lot of data collection involved, but really it’s a people program. The CEMs and the people they work with in the communities, maintaining that rapport, it’s hard to put a value on that.

I’m really impressed going to the training sessions for the CEMs, how seriously most of them take their job, how knowledgeable they are, and to let that go away, when you’re still agreeing that there might be a need for them sometime in the future, I think would be really risky. If anything right now, I think that we should probably be having more dialogue with some communities than we are. But yes, I think the people part of it would be really hard to resurrect.

Even for ongoing activities, I remember getting a call a couple years ago from one of our CEMs, I think in Pioche or Caliente, and all they wanted to know was whether DOE was shipping wastes along a certain highway route. It just took a quick phone call over to DOE to tell them Fernald was shipping. The CEM said, “Oh, okay, well, we thought we were seeing more trucks.” All they really wanted to know was something like that. So really it wasn’t the station per se, but it was the network that was established through the station that allowed them to have somebody they knew they could contact, and then let us have a way to get information back to them. That was all the information they needed, and it was very quick and very efficient.

If DOE were to resume testing again, and I think we’re already picking up signs of this from the public meetings that’ve been held in St. George and Kanab recently, where I think a lot of the issues that’ve been expressed by people there probably have to do with the period of atmospheric testing. What DOE is talking about is potential for resuming underground nuclear testing, which for the most part there were not a great number of releases. The likelihood of releases is small.
Question: But the ones that happened were memorable.

David: But they’re memorable, right. The only way of being properly prepared is to assume that any one of them could release, because certainly none of them are designed to release. In the sense that, if DOE announced its intention to start testing again, would we have to deal with some issues that really go back to the period of atmospheric testing when the fallout was routine? Definitely. We will probably have to do some monitoring that, if we looked at it strictly from a probability, you would say, “Oh, it’s not necessary.” But, from the value for public perception to say no, there’s no iodine-131 getting into the milk in the farms, for example. I think it would be really, really important since if they ever started testing again, and had something go wrong, my guess is they would have trouble ever doing it again.

Question: Ever testing again?

David: Ever testing again. As it is, I think that one of the things they’re really underestimating right now is, even with the CEMP, getting people comfortable with the idea of testing again. If you look at places like St. George and even Cedar City, there’s a lot of people that have moved there since testing. They know about testing but they weren’t there when testing was ongoing and I think they’re going to have concerns that have to be addressed, sincerely addressed. There’s a lot of the downwinders still there.

Question: What do you see for the future of the program?
David: For DRI, I think it’s exciting that we’ve had some representatives from other countries come and look at it and I’m hoping that development is something that DRI has a chance to get involved in. Maybe it won’t look exactly like the CEMP, but it will help develop programs that have some of those same objectives, which has an effective means of involving and communicating monitoring results to the public. We’re certainly heading down that route if Yucca Mountain becomes a reality. We’re trying to make the case that now it’s really time to start monitoring for Yucca Mountain. Not when the waste comes but beforehand, so you establish a credible background and then people can see whether over time there’s environmental impacts or not if the repository is actually used for high-level waste. So far, DOE seems to agree that having things like that in place before they start receiving waste makes sense.

Question: I know there have been a lot of technological changes and upgrades. Where do you see that going?

David: One of the things that we need to look at next is monitoring farther afield. The CEMP stations are in places where, if there was some kind of release from a test, somebody might have to take an emergency response action, get people indoors or get people out of the way, get livestock, inside barns or provide shelter. At more distant locations, it would be important to collect information so that we could estimate a credible dose. That’s one of the next steps in the monitoring program, and what we’re hoping to do is rely a lot on existing networks of stations.

We’ve had some discussions recently about linking in with some of the homeland security monitoring infrastructure that’s being considered for the United States, which makes sense to me. There are other networks in the United States now for monitoring, and whether
they’re part of the monitoring network or not, if there was an accident here, they would measure something from the NTS. So, having them onboard and making sure that their procedures are going to provide data that’s compatible or comparable with what we might collect in the CEMP program will be important. If somebody were to come up with vastly different conclusions about a plume that released from another network, then we’d have a real problem. That would create a real credibility problem. It’s not that we have to use a certain network but it just makes sense to have them onboard and to know what instruments they’re using and how they’re calibrated and how they’re expressing their data in units, so that, when all of this comes together, the pieces can fit together.

I’m sure there’ll always be some discrepancies. But, if Chernobyl was any indication, the cloud was detected going around the world three times and stations all over the world were detecting Chernobyl. That would be the same kind of issue that the Nevada Test Site worst-case scenario might have to face.

Question: Chernobyl tested the CEMP system and was picked up by the stations?

David: Right, there’s certainly some value in that. It’s been almost 20 years since Chernobyl now. 1986. And there have been a lot of advances in monitoring. But it’s easy to forget that the way most people found out about Chernobyl, because the Soviets didn’t announce there’d been this accident, was that they detected iodine in milk samples in Scandinavia and they said, “Something’s going on. This is way, way too high.” That was because they had systems in place to monitor. I’m sure in a short amount of time it would’ve been detected with something
else, but the reality was the Russians being who they were at the time, weren’t really willing to disclose that a major accident was going on.

I think there is some credibility and safety benefit in thinking of monitoring networks that way. A good example, different than CEMP, would be that today it would be very difficult for a country to do a secret underground nuclear test unless it was very, very small. Seismic networks, not government seismic networks, but research seismic networks like University of Nevada, Reno, runs or something like that, are so ubiquitous now and data is collected so routinely from them that, in a sense, it’s a de facto safety measure for detection of something like that. And the fact that you’re not relying on a government to do that, I think, also adds to the credibility. You don’t have to rely on the government of a country saying, “No, no, we didn’t do this,” because we know enough about the seismic signals of a nuclear test versus an earthquake now that it can be detected.

Question: Is there anything that you would like to add?

David: I think it’s a really fun program. I still think that we have a lot to do if it really is going to be used in case testing is done again. If I had one concern, it’s being able to convince DOE of how difficult it would be to reestablish it because of the people issue. In some ways, right now, with all the changes that are going on with federal agencies and the DOE office here in Las Vegas losing a lot of people, you have as much institutional knowledge with some of the CEMs as you do anyplace. They’ve been in their communities a long time. They’re a real resource and I think it would be wise for DOE to look at it that way, that they actually provide a service to DOE, not just the other way around.
Ted Hartwell, Desert Research Institute, CEMP Program Manager

I've had the sincere pleasure of managing the CEMP for DRI for over four years. During the time I've been associated with the program, it has undergone several important changes and upgrades in an effort to increase public access to monitoring data. Improvements in communications networks and the creation of a web page on the internet, as well as the addition of a full suite of meteorological sensors at the stations, have allowed the CEMP to provide near real-time data for a wide variety of environmental conditions.

While I see a continuation of the CEMP's invaluable roles in providing off-site monitoring data to the public, and in supporting emergency response activities should underground nuclear testing ever resume at the NTS, one of the more personally gratifying things is to see how the CEMP's success is being applied in other areas. Discussions are currently underway to design an off-site monitoring network for Yucca Mountain that would be modeled after the CEMP, including a critical role for direct public involvement and oversight of a project of great concern to Nevada residents. Since its "online" debut, the CEMP web site also has caught the eye of international scientists, some of whom have expressed an interest in developing similar community-based programs in their own countries. There is also potential in the future for the CEMP and similar networks to become integrated into programs addressing homeland security, as well as issues of nuclear non-proliferation.
Chapter Nine

Conclusion

Nate Cooper summarizes the program:

How much in the dark we were about what we should really be doing. With a lot of luck and some experienced people, we pretty much played it by ear. That was made much easier by the people in the communities, both the officials and advisors we met there and the great people that joined us as station managers. It was also critical that the people at DOE and EPA were willing to go the extra mile to get the program up and running, and they stayed in that mode throughout the life of the program, as I knew it.

My understanding of the original objectives of the program was the need for federal agencies to come clean with the public about what was, and had been, happening with the weapons testing at the Nevada Test Site, in some fashion that could be accepted or believed. From that perspective, everything that was done was geared toward affording anyone interested, straight and honest answers to their questions and doubts. The data that were collected, analyzed, and disseminated, were designed to accomplish that objective.

The overriding results of the program were due in large part to the superb and loyal people that were (and are) our station managers. Because they were known and trusted in their communities, our message gained much better acceptance, though we did not win them all. Not enough can be said about the importance of that contribution, and they have never really been properly recognized for that. Many other agency people also contributed to the effort that has made the program what it is today, which is, it seems to me, a trusted interface between the government and people who were forced to accept something they may not have believed they needed.
NOTES


4. Daryl Thomé generously shared this document, allowing me to focus on the oral histories.

   “Community Radiation Monitoring Program The First Thirteen Years,” Daryl J. Thomé, E. Nathan Cooper, Anne C. Neale

5. The Nevada Site Office of the U.S. Department of Energy (DOE), National Nuclear Security Administration opened the Coordination and Information Center (now referred to as the Nuclear Testing Archive) July 17, 1981, to collect and make available all historical documents, records, and data dealing with radioactive fallout from all U.S. testing of nuclear devices.

6. This article provided courtesy of Russ Cullison, DRI.

7. Plowshare was a series of tests conducted to determine if nuclear explosives could be applied to develop peaceful uses for atomic energy. The Plowshare Program was initiated by the Eisenhower-era Atomic Energy Commission. Plowshare searched for peaceful uses of nuclear weapons technology, taking its name from a passage in the Old Testament book of Isaiah: "They will beat their swords into plowshares and their spears into pruning hooks. Nation will not take up sword against nation, nor will they train for war anymore." The most
striking reminder of Operation Plowshare is the Sedan Crater, 1,280 feet across and 320 feet deep. It was an experiment in the use of nuclear explosions for excavation, to dig canals or dredge harbors. The Sedan test detonated a 104-kiloton device 635 feet underground, displacing 12 million tons of earth. Tons of that sand became airborne fallout, and the process was deemed unsuitable for digging. Occasional nuclear Plowshare tests, 27 in all (35 detonations – a test can consist of one or more detonations), continued until 1973.

8. “Preliminary Proposal - Program for Training in the Monitoring of Air Borne Radioactivity,”
Gary Sandquist and Craig Jensen


10. The Mighty Oak Test of April 10, 1986 was a tunnel test that produced a “controlled release of radioactivity detected offsite.” According to United States Nuclear Tests July 1945 through September 1992, Department of Energy, DOE/NV-209 (Rev. 15), December, 2000, p. 82 (There was no venting during the test. Daryl Thomé clarifies the reason for the post-test venting, “approximately one week after test execution, a controlled ventilation of the tunnel complex was initiated, but only during specific wind direction. This was necessary to allow re-entry and recovery of equipments and experiments.”)

11. A Dewar is a device for holding liquid nitrogen. Dewar is the name of the company.


15. Fradkin, Fallout 126, 266.

17. The National Water and Climate Center provides real-time snow and climate data using automated remote sensing from sites in the mountainous regions of the Western United States.