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COMMUNITY RADIATION MONITORING PROGRAM

ANNUAL REPORT

October 1, 1991 – September 30, 1992

**by
E. Nathan Cooper**

DISCLAIMER

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May 1993

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**COMMUNITY RADIATION MONITORING PROGRAM
ANNUAL REPORT**

October 1, 1991 – September 30, 1992

**by
E. Nathan Cooper**

**Water Resources Center
Desert Research Institute
University and Community College System of Nevada**

Publication # 45106

**prepared for
Nevada Operations Office
U.S. Department of Energy
Las Vegas, Nevada**

May 1993

This document is *UNCLASSIFIED*

**Derivative
Classifier**

**Richard D. McArthur
Desert Research Institute**

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CONTENTS

SECTION

1.	INTRODUCTION	1
2.	STATIONS AND STATION MANAGERS	3
	General Comments	3
	Manager Training	8
	Manager Performance Evaluation	9
3.	PUBLIC INTERACTION	10
	Outreach Efforts	10
	Site Visits	10
	Communication	13
4.	DATA VERIFICATION	14
5.	SUMMARY	15
	REFERENCES	16
	APPENDICES	
	A. Station Manager Training Sessions	
	B. Documentation of Outreach Efforts	

SECTION 1

INTRODUCTION

The Community Radiation Monitoring Program (CRMP) is a cooperative effort between the U. S. Department of Energy (DOE); the U. S. Environmental Protection Agency (EPA); the Desert Research Institute (DRI), a division of the University and Community College System of Nevada and the Nuclear Engineering Laboratory of the University of Utah (UNEL). The twelfth year of the program began in the fall of 1991, and the work continues as an integral part of the DOE-sponsored long-term offsite radiological monitoring effort that has been conducted by EPA and its predecessors since the inception of nuclear testing at the Nevada Test Site (NTS).

The program began as an outgrowth of activities that occurred during the Three Mile Island incident in 1979. The local interest and public participation that took place there were thought to be transferrable to the situation at the NTS, so, with adaptations, that methodology was implemented for this program. The CRMP began by enhancing and centralizing environmental monitoring and sampling equipment at 15 communities in the existing EPA monitoring network, and has since expanded to 19 locations in Nevada, Utah and California (see Figure 1).

The primary objectives of this program are still to increase the understanding by the people who live in the area surrounding the NTS of the activities for which DOE is responsible, to enhance the performance of radiological sampling and monitoring, and to inform all concerned of the results of these efforts. One of the primary methods used to improve the communication link with people in the potentially impacted area has been the hiring and training of local citizens as station managers and program representatives in those selected communities in the offsite area. These managers, active science teachers wherever possible, have succeeded, through their training, experience, community standing, and effort, in becoming a very visible, able and valuable asset in this link.

Other methods that are used to further the goals of the program include presenting public education forums in many communities, disseminating information on radiation, weapons testing, energy and related subjects, and developing and maintaining contacts with local citizens and elected officials in the offsite area. The public presentations have evolved from the original prescribed program into information on specific subjects being presented to identified and selected audiences who request information. These audiences include school classes at all levels, service clubs, professional groups and conferences.

The responsibilities of the four entities involved in the program, documented in previous reports (see references), briefly are as follows: DOE provides funding and management guidance; EPA is responsible for all technical aspects of the program, i.e., equipment installation and maintenance, sample collection and analysis, data analysis and dissemination and management support; the UNEL provides semi-annual technical training for Station Managers and Alternates; and DRI organizes the public outreach component of the program, hires and manages Station

Managers and Alternates, interacts with people in the communities and disseminates information as appropriate.

SECTION 2

STATIONS AND STATION MANAGERS

GENERAL COMMENTS

The number and locations of the Community Radiation Monitoring stations did not change during this year (see Figure 1). Plans for establishing the two additional stations mentioned in the previous report have been put on hold due in part to the weapons testing moratorium, and financial considerations also play a part in that decision. Relocation of at least three stations to more appropriate places in the communities where they currently are in operation is scheduled for FY 1993, as time and budgets permit.

Figure 1. Community Radiation Monitoring Station Locations.

Station Managers and Alternate Station Managers were in place at all 19 stations throughout the year (see Table 1). The very minimal changes to the roster are listed below:

Cedar City, Utah – Glade Sorenson, because of his retirement from teaching, was made Alternate Manager.

Don Newman was promoted to Station Manager.

Las Vegas, Nevada – Roy Reeder resigned as Station Manager.

Don Curry was promoted to Station Manager.

David Peltz, science teacher at Rancho High School, was hired as Alternate Manager.

Station Managers and Alternates continue to work as DRI part–time professional employees, with their annual contracts coinciding with the federal fiscal year. Turnover remains remarkably low, with more than half (eight) of the people originally hired into the program in 1981 still involved.

Table 1
COMMUNITY RADIATION MONITORING PROGRAM

ALAMO

Clark M. "Rick" Hardy (Lorna)
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MANAGER TRAINING

Two training sessions for Station Managers and Alternates were conducted by Dr. Gary Sandquist of the UNEL during this year. Agendas, attendance lists and transcripts of pertinent portions of those events are included as Appendix A of this report.

The Winter training session was held at the Rio Hotel in Las Vegas on January 4–5, 1992. Twenty–eight Station Managers and Alternates attended the two day event, during which seven speakers made presentations on such diverse subjects as the status of legislation and compensation for Downwinders, plutonium/tritium production reactors at the Savannah River Site, the role of alternative energy sources in the National Energy Policy, the high level nuclear waste repository, the future of nuclear power in the United States, radon hazards, and deer migration studies at the NTS. Station Managers and Alternates made reports from each of their communities on activities, events and reactions relating to our program.

This meeting was the first Winter session to be held other than during the week between Christmas and New Years, and the timing was an experiment. It seemingly worked well, with almost unanimous approval from the trainees. Future plans will probably reflect that consensus.

The training session itself, from the evaluation forms returned by the people attending, was the best ever. Very positive comments were received on both the format and on the diversity and appropriateness of the materials presented.

The Summer training session was held for the fifth consecutive year in Brian Head, Utah. Different facilities were used this time (the Brian Head Hotel) and were found to be much more adequate and professionally managed than those used in the past. The session officially started on Monday, August 3, and concluded Friday, August 7, 1992.

Dr. Gary Sandquist (UNEL) did his usual excellent job of putting together the agenda, with knowledgeable speakers presenting state–of–the–art material on timely subjects, interspersed with training and review of the basics of nuclear science. In addition to having Nick Aquilina, Robert Nelson, Bruce Church, Charles McWilliam, Katie Poley, Rudy Cruz and Loretta Helling from the DOE Nevada Operations Office making presentations, Lynn Anspaugh of Lawrence Livermore National Laboratory, Peter Etinger of Nevada Desert Experience, Bonnie Pauley from EG&G, Rocky Flats, and Daryl Thome', Paul Weeden, Gerald Martin and Herb Maunu from the U.S. Environmental Protection Agency's Environmental Monitoring Systems Laboratory (EPA–LV) all made significant contributions to the training program. The University of Utah was also well represented, not only by Gary Sandquist and Mike Slaughter, but Keith Schiager presented some excellent material, along with Larry Anderson of Pacific Northwest Laboratories at Hanford. Bob Taft, former Assistant Manager of the Nevada Operations Office, and Al Howard, DOE/Rocky Flats, also contributed to the success of the session.

In addition to the 33 Station Managers and Alternates from our Community Radiation Monitoring Program who attended the Summer session, there were 10 Station Managers and Alternates from the Rocky Flats Community Radiation (COMRAD) program in attendance for the full week. Also, on an experimental basis, nine teachers who are not directly affiliated with the program were selected to attend the session. Eight high school science teachers and one junior high school science teacher, from four schools in Nevada and Utah, were awarded nominal stipends that enabled them to participate in the training. Reactions from these "guest" teachers were extremely positive, and in one case her attendance resulted in an appointment as science curriculum coordinator in her school district and other significant recognition. All of these "guests" indicated that information and insights acquired at Brian Head would be carried back and used in their classrooms in the future. This effort was judged successful enough that it will be continued for the summer training session in August 1993.

Another outstanding feature of this session was the afternoon spent on the Radiation Field Survey Exercise, with all participating in the "hands-on" experience. Herb Maunu and his EPA crew, Jeff Davidson, Flo DeLuna, Ken Giles, Mark Sells and Lynn Karr did a great job of organizing, instructing, and operating the field exercise. The trainees had fun, in addition to gaining valuable experience under real (safely simulated) conditions.

Evaluations and comments from the trainees are included in Appendix A of this report.

MANAGER PERFORMANCE EVALUATION

The DRI program manager responsible for hiring and managing the Station Managers and Alternates does a more-or-less continuous evaluation of these employees throughout the year as has been done in the past. Weekly checks on the regularity of visits to their respective stations, responsiveness to requests for assistance in their communities from other program people, contacts with people with whom they interact, and periodic reports from the individuals are the tools used to effect evaluations and to make changes as appropriate.

The overall performance of our Station Managers and Alternates continues to improve with time. They have become accepted in their communities as the source for information pertaining to things nuclear and activities relating to the Nevada Test Site. They are, based on the above criteria, doing a better job overall than in the past, and their general spirit of cooperation, interest and sense of "belonging" have significantly increased their value to the program. The assistance rendered by Station Managers and Alternates in identifying audiences and making arrangements for our outreach efforts is of very real help in that area.

SECTION 3

PUBLIC INTERACTION

OUTREACH EFFORTS

The major thrusts of our outreach programs this year were the presentations made at public meetings and the personal contacts made throughout the year with officials and residents of the offsite area.

Nineteen formal presentations were made during the year at 10 locations in Nevada, Utah, and Colorado, which reached 183 adults and 519 students in primary and secondary schools (Table 2). These numbers are lower than those for FY 1991, but the response and reaction this year was probably better than it has been in previous years. Audience identification efforts were somewhat curtailed by budgetary constraints, but are continuing at year-end with indications of ongoing interest in our offerings from numerous sources. Figure 2 is a graphic representation of results of our public presentations over the past 12 years. It shows, among other things, that we have reached many more of the younger people in the past two years than previously, which was a calculated result.

Documents relating to program outreach activities this year are presented in Appendix B of this report.

SITE VISITS

Site visits are accomplished as a part of routine trips around the offsite area by DRI staff, which combine data verification, audience identification, meeting arrangements, personal contacts and other program business with station inspection. Eighteen of the nineteen Community Monitoring stations were visited at least three times each during the year, and any apparent problems were identified and either resolved or reported to EPA or the Station Manager for action. In addition to the communities where our stations are located, numerous other locations and people are randomly visited with very little additional effort and possibly some positive results. We do try to inform as many people as possible about our program and its purpose.

Table 2
OUTREACH EFFORTS
FY 1992

DATE	LOCATION	AUDIENCE	SUBJECT	PRESENTER/ AFFILIATION	ATTENDANCE ADULTS STUDENTS
10/03/91	Caliente, NV	Caliente Primary School	"ABC's of Radiation"	Bama McKnight/REECo	4 60
11/13/91	Overton, NV	Moapa Valley Rotary Club	"Downwind Radiation Effects"	David Wheeler/DOE	12
11/18/91	Denver, CO	Rocky Flats COMRAD Station Managers	"The Nevada Community Radiation Program"	Daryl Thome'/EPA Nate Cooper/DRI	13
12/12/91	Overton, NV	Moapa Valley Rotary Club	"Offsite Radiation Monitoring"	Daryl Thome'/EPA	12
01/15/92	Overton, NV	Moapa Valley Rotary Club	"History of Nuclear Weapons Testing"	Bob Taft/REECo	13
02/12/92	Uhalde Ranch, NV	Country Elementary School	"NTS Deer Migration Studies"	Ken Giles/EPA	12 9
02/24/92	Tonopah, NV	Tonopah Business Women's Sorority	"Consumer Product Radiation Hazards"	Jerry Martin/EPA	16
02/25/92	Tonopah, NV	Tonopah Junior High School	"Downwind Radiation Effects" and "The Sheep Kill"	David Wheeler/DOE	3 101
03/04/92	Pahrump, NV	Rotary Club	"NTS Deer Migration Studies"	Ken Giles/EPA	23
04/07/92	Panaca, NV	Lincoln Co. High School	"NTS Deer Migration Studies"	Ken Giles/EPA	2 25
04/07/92	Panaca, NV	Pioche/Panaca Jr. H. S.	"NTS Deer Migration Studies"	Ken Giles/EPA	4 80
04/20/92	Tonopah, NV	Tonopah Rotary Club	"NTS Archaeological Studies"	Bob Jones/DRI	20
04/24/92	Tonopah, NV	Tonopah Middle School	"ABC's of Radiation"	Bama McKnight/REECo	3 50
04/24/92	Tonopah, NV	Tonopah High School	"ABC's of Radiation"	Bama McKnight/REECo	2 37
05/15/92	Beatty, NV	Beatty High School	"Careers in Archaeology, Hydrology and Geology"	Paul Buck, Kerry Varley, and Jim Cullen/DRI	125
06/01/92	Coal Valley, NV	Complex One	"NTS Deer Migration Studies"	Ken Giles/EPA	6
06/09/92	Tonopah, NV	Rotary Club	"Joint Verification Experiences"	Chuck McWilliam/DOE	19
07/14/92	Tonopah, NV	Rotary Club	"NTS Deer Migration Studies"	Ken Giles/EPA	16
09/16/92	Indian Springs, NV	Indian Springs High School	"Current Events"	Bob Taft/REECo	3 32
				ATTENDANCE TOTALS	183 519

FIGURE 2
PUBLIC CONTACTS IN FORMAL PRESENTATIONS
1982-1992
COMMUNITY RADIATION MONITORING PROGRAM

FISCAL YEAR

* Changed Format

Presentations 130

Attendance	
Adults	2,717
Students	<u>1,164</u>
TOTAL	3,881

COMMUNICATION

Through telephone calls, correspondence, direct contact during field visits, the continued clipping service and other means, DRI staff maintains close contact with our employees, the Station Managers and Alternate Station Managers. Notification of announced nuclear tests is made by telephone to them within hours of the event, and other materials are transmitted by telephone, fax or mail. Problems that arise in the communities are relayed to EPA or DRI if the Managers need assistance.

As discussed earlier, contacts with the public continue through a number of avenues, and they seem to be increasing in number and getting easier with time. DOE, EPA, UNEL and DRI program personnel have developed a very good working relationship as the program has matured.

SECTION 4

DATA VERIFICATION

An effort to duplicate or replicate certain data collected by the EPA on this program was undertaken by DRI several years ago. In order to be able to say, and verify, that data collected, analyzed and reported by EPA are, in fact, accurate, DRI continues to acquire from a source totally independent from any government contact the same brand and type of thermoluminescent dosimeters (TLDs) used by EPA. We are furnished the equipment by the Radiation Measurements Facility at the College of Engineering and Applied Sciences, Arizona State University (ASU). We install the TLDs in the field ourselves at approximately the same time intervals as the EPA installation, collect them ourselves and send them back to ASU for analysis and reporting. Those results are then compared with EPA data.

Comparison of results between DRI and EPA data have consistently indicated two things:

1. The data collected by each agency at each location compared favorably enough to indicate that there are no suggestions of problems with equipment or analysis methods.
2. No data collected and analyzed by either agency indicate that radiation levels at any location were outside the range of natural background.

Based on these consistent results for at least two years, it is suggested that some modification of this part of the program be considered in the future.

SECTION 5

SUMMARY

After more than 12 years of operation, the Community Radiation Monitoring Program is in good order. The primary objective of the program, informing people in the offsite communities about the NTS and nuclear-related subjects, seems to be well received in those communities. The format of the program, that of hiring people in the communities to be knowledgeable spokespersons on nuclear matters, has apparently worked nicely. That group of 35 people, our Station Managers, Alternates, and Emeritus Station Manager, remain enthusiastic about the program and are excellent representatives of the agencies involved. These people are considered a valuable resource and point of contact in their communities by all concerned, and there is minimal turnover. The training sessions for Station Managers are well attended and well received. These people are doing a good job.

The program emphasis and operating methodology are undergoing gradual changes to meet developing technologies, but this serves to enhance the effectiveness of the program. The program representatives from the agencies involved, the DOE, the EPA, the UNEL and DRI, have developed an excellent working relationship, which works for the betterment of the program. The cooperation between these staff people and the Station Managers has been a key to the success of the program.

As experience teaches us ways to improve our communication with the public, including special interest groups, community leaders and particularly the younger generation, we will continue to get closer to achieving our programmatic and personal goals. We are offering information and opportunity, and are seemingly making a difference.

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APPENDIX A

Station Manager Training Sessions

COMMUNITY RADIATION MONITORING PROGRAM STATION MANAGERS TRAINING SESSION

January 4 – 5, 1992

RIO SUITE HOTEL – Interstate I–15 and Flamingo Road – (800) 888–1808 (RIO)
(702) 798–8882 (DRI) – Las Vegas, NV

<u>Saturday 4 Jan</u>	<u>Activity</u>	<u>Sponsor</u>
7:45 a.m.	Continental Breakfast	DRI
8:00 a.m.	Welcome Winter Session Overview	G. Sandquist – U of U
8:15 a.m.	Comments by NTS Operations Manager – Activities at DOE Facilities and Future of Nuclear Defense Program in US	N. Aquilina – DOE
9:15 a.m.	“Downwinders” – Status of Legislation & Compensation for Downwinders	D. Wheeler – DOE
9:30 a.m.	Break	
9:45 a.m.	Next Generation Nuclear Reactors (PRIME)? – Passive & Inherently Safe, Reliant and Malevolence Resistant Nuclear Plants	G. Sandquist – U of U
10:45 a.m.	Break	
11:00 a.m.	Plutonium/Tritium Production reactors at SRS – Next Generation reactors at Savannah River Site (SRS) at Aiken, South Carolina	R. Ferrar – SRP
12:00 a.m.	Lunch	
1:30 p.m.	Alternative Energy Sources – The Role of Alternative Energy Sources in National Energy Policy	G. Sandquist – U of U
2:30 p.m.	Break	
2:45 p.m.	A High Level Nuclear Waste Repository – Nuclear Waste Disposal & National Energy Policy	A. Robinson – DOE
3:45 p.m.	Break	
4:00 p.m.	What is the Future for U.S. Nuclear Power? – Perspectives of the U.S. Council for Energy Awareness (USCEA)	C. Goldstein – USCEA
6:30 p.m.	Dinner at Nicks Supper Club – Henderson	
<u>Sunday 5 Jan</u>	<u>Activity</u>	<u>Sponsor</u>
7:45 a.m.	Continental Breakfast	DRI
8:00 a.m.	Radon – A Major Hazard or a Myth? – Assessment, Risk and Management of Radon in Dwellings	R. Hopper – EPA
9:00 a.m.	Station Managers Reports	Station Managers
10:00 a.m.	Wildlife–Radiation Studies at NTS – Radiation Exposure and Consequences in Deer on the NTS	K. Giles – EPA
11:00 a.m.	Round Table Discussion – Summary of Training Session – Evaluation of Session – Administrative Details	All Participate G. Sandquist – U of U J. Blackburn – DRI N. Cooper – DRI
12:00 p.m.	Farewell and Dismissal	G. Sandquist – U of U

NOTES:

ATTENDEES
WINTER TRAINING SESSION
Las Vegas, Nevada
January 4-5, 1992

ALAMO	Dell Sullivan	Alternate Manager
AMARGOSA VALLEY	Kenneth G. Garey	Station Manager
AUSTIN	No attendance	
BEATTY	John C. Lisle	Station Manager
CALIENTE	Judy Foremaster	Station Manager
	Brent H. Perkins	Alternate Manager
CEDAR CITY	Glade V. Sorensen	Station Manager
	Donald Newman	Alternate Manager
DELTA	Beverly Jean DeWyze	Alternate Manager
ELY	Rebecca S. Murdock	Station Manager
	Gloria Ann Mullen	Alternate Manager
GOLDFIELD	Myron A. Johnson	Station Manager
	Christine D. Tatum	Alternate Manager
INDIAN SPRINGS	James M. Hopkin	Station Manager
	Larry L. Hathhorn	Alternate Manager
LAS VEGAS	Don M. Curry	Station Manager
	David J. Peltz	Station Manager
MILFORD	Dale E. Jensen	Station Manager
OVERTON	No attendance	
PAHRUMP	Albert J. Giannotti	Station Manager
	Daniel J. Donnelly	Alternate Manager
RACHEL	Christy S. Castleton	Station Manager
	Ruth Agee	Alternate Manager
SALT LAKE CITY	Gary M. Sandquist	Station Manager
ST. GEORGE	John F. (Jack) Heppler	Station Manager
	Kelly N. Bringham	Alternate Manager
SHOSHONE	Brian W. Brown	Station Manager
	Kenneth W. Smith	Alternate Manager
TONOPAH	Lawrence (Larry) Woods	Station Manager
	Mark E. Howard	Alternate Manager

COMMUNITY RADIATION MONITORING TRAINING SESSION STATION MANAGER REPORTS

January 4 – 5, 1992

LAS VEGAS, NEVADA

Nate Cooper

Nate introduced the newest members of the CRMP extended family. David Peltz is the new Alternate Manager in Las Vegas. David teaches at Valley High School. Larry Goins, the Alternate in Pahrump, asked to be replaced because of his busy schedule as football coach. Daniel Donnelly is the new Alternate Manager in Pahrump. Three people that joined us about the time of the Summer training session are Kelly Bringham, Alternate in St. George, Utah, Donald Newman, the Alternate in Cedar City, Utah and with the retirement of Mel Baldwin, Station Manager in Cedar City, Glade Sorensen is the new Station Manager in Cedar City. Don Curry, who was the Alternate Manager in Las Vegas now is the Station Manager in Las Vegas.

Dell Sullivan, Alternate – Alamo, NV:

Dell

Rick Hardy, the Station Manager, couldn't attend the session. There is not much change in the area. Most of the people in Alamo know the station is there, however, if there is a change in attitude it is more positive. There was a problem with the noble gas sampler, but EPA got it taken care of. The EPA does a good job in service of the equipment. The outstanding event of the year was the trip to the Test Site for the high school students. For the next planned tour of the NTS only those students who have an interest in visiting the Test Site will go. If information on the Nevada Regional Science High School Bowl would have been given at the Summer Session I'm sure Rick would have been interested in participating.

Nate

Bill Cox, Station Manager and Tom Brannan, Alternate, from the Austin, NV station couldn't make it because of commitments at school. Bill sent in his report. The outstanding events of the year are help from DOE and DRI. He said there was little interest in the station and not much going on in the community.

Ken Garey, Amargosa Valley, NV:

Ken

Ken said the facilities are great. The air sampler is working fine, except for a low voltage problem. Herb and his group are trying to remedy that. The science and math teachers have brought their students by for a tour of the station. With the proximity of Yucca Mountain, the fact that it can be seen from the station is favorable. Reno, Channel 5 television station, came to Amargosa Valley to talk to some of the farmers who might know something about Yucca Mountain. Ken went out in the pasture, had his goats around him, then commenced to give an interview. They stopped him about half-way through the segment, and said that he seems to

know a bit more than he had let on. His response was that he considered himself part of the informed public. Then he mentioned some of the meetings he had attended. He invited them to join him as he went to check out the EPA station. The cameraman staged Ken driving up to the station while he checked it out. He received a copy of the tape and the EPA part came out well. Unfortunately his answers to their leading questions were deleted.

John Lisle, Station Manager – Beatty, NV:

John

Everything is going great in Beatty. The High School has 50% higher enrollment than last year. The biggest highlight was the move into a new high school. Every year he teaches a segment on radiation, and as usual the students don't know anything about what is going on. This year some polls were sent out to the parents, and the parents are basically uninformed. The polls were also sent to elected officials, the president of the United States, and the Governors. The equipment is working well. The new noble gas sampler quit but other than that everything is working well. Some students and senior citizens took tours of the station.

Judy Foremaster, Station Manager and Brent Perkins, Alternate – Caliente, NV:

Judy

There is not a lot of change in Caliente. The noble gas sampler had some problems, but seems to be working fine. Most of the people that stop by the station are tourists. The community is familiar with the station and they don't ask many questions.

Brent

In October Nate and Bama McKnight came up to the Caliente Elementary School. Bama presented the "ABC's of Radiation" to about 50 students in the 4th, 5th and 6th grades. It went very well and another presentation is scheduled for April that will also be expanded to the middle school and high school. The Community Radiation Monitoring Program pamphlets have been very helpful. He has passed out several this past year to a group of tourists from Reno, the Federal Express driver, and to the new local mortician. After giving a brief explanation, the handout is very informative and well received.

Glade Sorensen, Station Manager and Don Newman, Alternate – Cedar City, UT:

Glade

The outstanding event of the year continues to be the Shakespearean Festival. The community continues to grow. The enrollment of the high school when we moved into it was 300 students, and there are now 1276 students, classes 9 through 12. Nine new rooms have been added in the basement of the high school. There is talk of new industry coming in to help support PEPCON, so Cedar City is continuing to grow. There doesn't seem to be much concern from community people.

Don

The equipment is working fine.

Beverly DeWyze, Alternate – Delta, UT:

Beverly

The outstanding events of the year were that Delta High School took the AA state football championship and also the state wrestling championship. More importantly, the math department continues to win in mathematic competitions. The American Legion had requested for a speaker, and she was so impressed with Nick Aquilina so had asked for him. However, he was unable to attend. Chuck McWilliams of DOE came and spoke on the U.S. & Russia Joint Verification Experiment. The crowd really enjoyed it and the response was very favorable. Nate and the others contacted were so helpful and she expressed her appreciation. After hearing Mr. McWilliams speak, there is now interest in taking a tour of the Nevada Test Site. Thanks to EPA, there is now a stool at the station which makes it much easier to reach and check the equipment. The accommodations here at the Rio have been just great.

Rebecca Murdock, Station Manager and Gloria Mullen, Alternate – Ely, NV:

Rebecca

The most outstanding event was the birth of my baby girl. The community had a civil defense drill, and many of the community people thought there was an earth quake. They didn't know that it was just a drill. It all worked out fine. The equipment works well most of the time.

Myron Johnson, Station Manager and Christine Tatum – Goldfield, NV:

Christine

Tina stated that she has been with the monitoring program for about 25 years. Everything is basically about the same in Goldfield. She appreciated being at the session.

Myron

Things have been very quiet this past year. The mines are shut down and there is very little change in the population. Many of the people that have moved in are associated with the Test Site. There have been little interaction with the schools. Myron has extended an open invitation for a tour of the station at anytime, but there is not much interest. There are a couple of teachers that are anti-nuclear. The equipment has been working well.

Nate

He would like to commend Tina and Myron. On occasion he gets around to the stations and stops by to see what is going on. A month ago in going by the Goldfield station Myron was there, it was dark and in the middle of a blizzard, but there was Myron checking on the station. The record from EPA indicates that during the year there were only about 5 days that the station was not visited.

Jim Hopkin, Station Manager and Larry Hathhorn, Alternate – Indian Springs, NV:

Jim

It is really quiet in Indian Springs. There is not a lot going on. A large portion of the population

do not work for the Test Site. The equipment works well. The Senior Citizen's group would probably have an interest in hearing a presentation. He talks about the station to his students, but in teaching Biology he doesn't take his students to the station. Larry Hathhorn takes his Physical Science students for a tour of the station. The most exciting thing that has happened is that EPA has come through with stainless steel forceps for changing the filters.

Larry

Take advantage of the resource people for presentations. Bama McKnight gave presentations the end of the school year to three classes, and that went very well. This year Bob Taft came out two days in one week. Bob gave a half-day presentation, then a couple of days later he responded to questions from the students. It worked out well.

Don Curry, Station Manager and David Peltz, Alternate – Las Vegas, NV:

Don

He just became the Station Manager this week and David Peltz just became the new Alternate Station Manager yesterday. Dave moved here from Philadelphia in September and Don moved here about a year and a half ago. They both teach at Valley High School. In terms of what is happening in Las Vegas, the only thing that is sure is what is happening with the school system, which continues to have rapid growth. In talking to Gene Butler, the science coordinator, we have had conversations on how data are obtained. There are a lot of science teachers who need to be taking advantage of the resources available. There is a lot of opportunity to utilize information in the science and chemistry programs that was presented here at the training session. The equipment is working well at the station.

Dale Jensen, Station Manager – Milford, UT:

Dale

Leon was unable to be here because of a meeting conflict. He is a representative of the Teachers Association. The community interaction continues to be more positive with each year of involvement in the program. Most of the contact has been through the students of all the science classes at the high school. He also applies it to his biology, physics, chemistry and physical sciences classes in the Junior High level. The station is located some distance from the High School, so he is not aware of how many people visit the station. However, in the winter time it is evident by the footprints in the snow that there is a lot of activity at the station.

Ken Giles came to Milford and spoke to an avid wildlife group. One of the concerns in western Utah is that the deer herd between Milford and the Nevada line is primarily gone. Ken gave a great presentation and put to rest some of the concerns of the people. He extended his appreciation to Ken for the program he presented. The station is working well. He thanked the EPA and Ross for the great job they do. He also expressed his appreciation for having the Winter Training Session after the first of the year. It is much better than having it during the Christmas break as far as families go.

Nate

Overton is not represented at this session. Some business came up and they could not make it.

Al Giannotti, Station Manager and Dan Donnelly, Alternate – Pahrump, NV:

Al

He introduced Dan, the new Alternate. Nate came out early this year and took a quick tour of the new school and indicates that the station could be moved soon. They could do more with the students if it were moved nearer the school. There is nothing new other than the new school. The equipment runs good.

Dan

Some of my students have seen Al at the station taking readings and inquired what he was doing. Dan is anxious to get more information on the data that are being collected.

Christy Castleton, Station Manager and Ruth Agee – Rachel, NV:

Christy

Rachel is having a population explosion. There was a new baby born in December and two more are due in the next couple of months. Ken Giles came out and gave his NTS deer study presentation. There was a record turn out. Thanks to EPA, there is now a stool at the station which makes it much easier to reach and check the equipment. She expressed her appreciation to the route people for the work they do. She and Boo have a race every Monday morning to see who can get to the station first. He must leave Las Vegas at 3:00 a.m., so he usually gets to the station first. The station has been working great and appreciate all the support we get from EPA, DRI and DOE.

Gary Sandquist, University of Utah – Salt Lake City, UT:

Gary

Our station is unusual as it is on a University campus. We have it rather easy compared to some since he has to walk by the station every day as he goes to school. There are probably 10,000 students that walk by the station during the day, as a major parking lot is just behind their building. On occasion either he or his students have the opportunity to explain the operation of the station. Probably the most popular part of the station is the barograph. A good prediction can be made on what the weather will be for the day. The station is operating well and EPA comes up about once a month to check out the station. He encouraged participants to take advantage of the special contacts that they have, in the DOE, EPA, DRI and the University of Utah. Make use of that and establish yourselves as a resource to your school and community. You know the people and you can access the equipment. He gave an example of how they used EPA. At the University they have a lot of radiation monitoring and they have a limited budgets. In talking to EPA they assisted in transferring several pieces of equipment over to his radiation safety officer. Make use of the excellent contacts you have.

Determine who your state and local science coordinators are, and let them know who you are. Contact them and tell them you have a station. Set up an appointment to have them come to the station and tell them a little bit about it. We hope to bring in some additional science teachers, just on a one-time basis, to hear what we present for the Summer Training Session. If it is successful it may be continued, and you will get to know the other science teachers in your area. He expressed his appreciation for those who made the effort to attend the session. With their continued support this makes the program the success that it is. There are representatives here from Rocky Flats and Hanford and Nick Aquilina is very pleased about the program. Nick has said that he feels that this program is the DOE model for public involvement and interaction.

Jack Heppler, Station Manager and Kelly Bringhurst, Alternate – St. George, UT:

Jack

The outstanding event this year was the moving of the station from the High School parking lot to Dixie College. He commended EPA for their efforts of the relocation. It is a beautiful station, set in a visible and pretty area. After ten years he expressed his amazement of the continued performance and maintenance of the station by the route people. He, too, agreed that having the training session after the Christmas holidays is a better time. County-wide they are experiencing a population explosion. There are from eight to ten thousand people added to the community in about a two-week period at this time every year when the storms come in. Both the high schools and the junior high schools are building on. The county population is projected to go to 100,000 in the next five or six years. Interaction has been about the same. He was invited to attend a Chamber of Commerce meeting this weekend, so there is still some interest in the community.

Kelly

He took a class for a tour of the station and one of the students, who is the son of the College President, indicated that his father has concerns about radiation.

Brian Brown, Station Manager and Ken Smith, Alternate – Shoshone, CA:

Nate

Brian attended the session yesterday but had commitments and had to return to Shoshone.

Ken

Shoshone is a very small dying community. The high school was closed at the end of the last school year, and most of kids go to Beatty and Pahrump. He took the entire high school, which consisted of four students, on a tour of the station in the fall. There is a verbal agreement to have the station moved to the downtown area where there are tourists. He agreed that the time and location of the training session have been excellent.

Larry Woods, Station Manager and Mark Howard, Alternate – Tonopah, NV:

Larry

There have not been any changes in the station, and little public interaction. Some people from

the east, who were visiting a family in town, came by the station. The man was a professional photographer, and he took pictures of the sun with the station in the background. He was in hopes of entering the pictures in a contest, so EPA may see their station in a photo contest. He is working on putting together a program for a sorority group, and also trying to get another presentation scheduled for the junior high. Much of the employment in town is through the Tonopah Test Range, and they pretty much know what is going on. Larry attended a DOE Environmental Restoration and Waste Management program in October, which was an informal program where the audience could ask questions. There were six DOE people presenting information, three from REEC Co and four in the audience. So it was much like the Town Hall meetings held in the past, where there were more presenters than audience.

Mark

The new Nye County High School just opened. After Thanksgiving there was a break in the water pump so we ended up with two inches of water all throughout the high school and auditorium. Each year he gives a presentation to his classroom. This year there was a lot of interest because of the news coverage on Yucca Mountain. The students wanted to know about radiation and what was happening.

Nate

The support of EPA staff, in his view, is what makes this program successful. Jerry, Herb and his crew do a superb job, and the support from the Department of Energy is appreciated.

JoAnne Burrows

JoAnne asked for a show of hands of those that would rather have the Winter Session after New Year's. The response was unanimous to have it after the first of the year, on either the 1st or 2nd weekend in January. She encouraged more contact with the organized groups in the individual communities. As an established member in your community you have a good opportunity for arranging presentations. There is a good selection of topics and we try to get good presenters.

For those of you that were able to be here, you are a very, very important program for the Department of Energy. Secretary Watkins in Washington, D.C. sees this as one of the best programs going for DOE, and he has encouraged other DOE offices to establish things like it. A report will be prepared for Mr. Watkins the first thing Monday morning on the proceedings of this training session.

Gary Gene Schreckhise, of Pacific Northwest Laboratories and Bonnie Pauley, Kim Howard and Al Howard from Rocky Flats have been here attending the training session. They are contemplating possibly interacting with us for the Summer Training Session.

Gene Schreckhise

Gene was impressed with the enthusiasm that he sees here, and also impressed with the support from DOE. At Hanford they started with three stations last February and things have been going very well. It was felt that the program is a very effective mechanism for getting the

message out to the people. They had a media event in November where the television stations and press were invited, and it was received very positively. The Station Managers did a very good job in getting the message out. He has also been working with Rocky Flats since the early part of June. It was primarily because of the help he received from Nate Cooper in getting their program going.

Al Howard

Their first station has just recently gone on line. It has been a struggle, and he said they could not have done it without the help from Nate's group, Gary and the interaction he has had from the people here at the Nevada DOE. The most difficult part was going through the contracts. It is projected to have five stations by the end of the year. This type of a program is very difficult in the face of current budgets. The reason they were able to get more going, which took them about eighteen months, was because of Bob Nelson's support and efforts. He thanked everybody for their help.

Bonnie Pauley

Bonnie showed pictures of six Station Managers and construction of the first station. One thing they have different is a big bulletin board, and there are three different instruments. She thanked the group and appreciates all the input into their program. They have talked to their Station Managers and they are looking forward to joining the group at the Summer Training Session.

Chuck Costa

He was really thrilled to see the continued enthusiasm of the program. He and Bruce Church initially got the program going shortly after the Three Mile Island incident, and things are working out fine. One of the things that he has tried to encourage to the people that work for him is that they should not make this a mechanical thing. There has got to be a lot of one-on-one interaction, and he felt that is what has made the program worthwhile. A couple of possible topics for the Summer Training Session are EPA is getting involved with a program helping the Regional Office in Massachusetts. It is called an unsanitary water fill. Rad waste, toxic waste, and explosives were dumped there. Hopefully they will be able to search the waters and with EPA's sampling program determine whether these casks and drums are letting anything into the environment. He would be willing to report on that, and he can also talk about his experiences in Alaska.

Bob Taft

Bob mentioned that he detected a note of enthusiasm in this training session that was equal to or better than any he has attended. Over three years ago, there was pressure on the Nevada Operations Office to very seriously consider whether this program was too large, or whether it is worthwhile. He felt that this would be a big mistake if they didn't do something with it to make sure that it continued. Now it has become a model for the rest of the country. What makes the difference is that you folks have the credibility in your local area. You have public credibility because you are not representing somebody that is directly tied to the government

as are the DOE people and contractors. You have an informal arrangement and that is the kind of communication that people will remember. It impresses the tourist that there is somebody in the community that can talk to them on a moments notice. As programs go, this one is a relatively inexpensive program.

Gary

David Wheeler was going to talk about Downwinder legislation, but he was unable to come. He has provided information on details about the Department of Justices new 800 phone number to make an inquiry on radiation compensation. On the back page information can be requested from the Federal Government. Funds have been identified for this bill.

Nate

Nate gave the new phone numbers for DRI's new Southern Nevada Science Center. The credit card number remains the same. Nate emphasized the importance of frequent regular visits to the stations. The Station Managers have been asked to go through the check sheet, and you are to mark the strip chart with the time, date and your initials. Those visits are quite important and the Station Manager evaluations are in part based on these notations.

COMMUNITY RADIATION MONITORING PROGRAM STATION MANAGERS TRAINING SESSION

**August 3 – 7, 1992 – Brian Head Hotel, Brian Head, Utah 84719
1 – (801) 677-3000**

<u>Sunday, 2 Aug.</u>	<u>Activity</u>	<u>Sponsor</u>
6:00 p.m.	Pre-Session Social – Get acquainted with CRMP participants	DRI
<u>Monday, 3 Aug.</u>	<u>Activity</u>	<u>Sponsor</u>
7:30 a.m.	Continental Breakfast	DRI
8:00 a.m.	Welcome and Introduction: Session Overview	G. Sandquist – U of U
8:15 a.m.	Current Events at DOE	N. Aquilina , NV Mgr. – DOE
9:15 a.m.	Break	
9:30 a.m.	Lessons Learned at Rocky Flats	B. Nelson, NV Dep. Mgr. – DOE
10:30 a.m.	Break	
10:45 a.m.	Station Manager's Reports	Station Managers
12:00 noon	Lunch	
1:30 p.m.	Protest to Nuclear Weapons Testing (Nevada Desert Experience)	Peter Etiger
2:00 p.m.	Panel Discussion – (N. Aquilina, B. Nelson, B. Church, and P. Etiger)	All Participate
3:15 p.m.	Break	
3:30 p.m.	Basic Nuclear Science Review	G. Sandquist – U of U
4:30 p.m.	Science Bowl	R. Cruz – DOE
5:00 p.m.	Session Ends	
6:00 p.m.	Picnic at Duck Creek Campground (If inclement weather – Lions Pavilion in Parowan)	DRI
<u>Tuesday, 4 Aug.</u>	<u>Activity</u>	<u>Sponsor</u>
7:30 a.m.	Continental Breakfast	DRI
8:00 a.m.	Characteristics of Radiation (Types, Units and Behavior)	M. Slaughter – U of U
9:00 a.m.	Background Radiation	G. Sandquist – U of U
10:15 a.m.	Break	
10:30 a.m.	Radiation Detection	M. Slaughter – U of U
12:00 noon	Lunch	
1:30 p.m.	Biological Effects of Radiation	G. Sandquist – U of U
2:30 p.m.	Health Physics Instruments	M. Slaughter – U of U
3:30 p.m.	Break	
3:45 p.m.	Personnel Monitoring	G. Sandquist – U of U
5:00 p.m.	Session Ends	
7:00 p.m.	Family Night Entertainment – Brian Head Hotel	All Participate

Wednesday, 5 Aug. Activity

7:30 a.m.	Continental Breakfast
8:00 a.m.	Air Sampling
9:00 a.m.	Chart of the Nuclides
10:00 a.m.	Break
10:15 a.m.	Review & Examination: Radiation Detection Principles & Equipment
11:00 a.m.	Making Science Teaching Exciting
12:00 noon	Lunch
1:30 p.m.	EPA Radiation Monitoring Program
2:00 p.m.	Rocky Flats Radiation Monitoring Program
2:15 p.m.	Radiation Monitoring Program Overview
2:20 p.m.	Radiation Survey Equipment Operation
2:45 p.m.	Radiation Survey Field Exercise (conducted outdoors near hotel)
4:00 p.m.	Station Operation Practice Session
4:45 p.m.	Film – “Classic Events in the Nuclear World”
5:30 p.m.	Session Ends

Sponsor

DRI
G. Sandquist – U of U
G. Sandquist – U of U

G. Sandquist – U of U
Don Curry – CRMP

D. Thome’ – EPA
B. Pauley – EG&G
P. Weeden – EPA
H. Maunu – EPA
All Participate
EPA
Video

Thursday, 6 Aug. Activity

7:30 a.m.	Continental Breakfast
8:00 a.m.	Introduction to Risk Assessment
8:45 a.m.	Risk Perception and Application to Nuclear Radiation
9:15 a.m.	Risks Averted vs. Costs of DOE Cleanup
10:30 a.m.	Break
10:45 a.m.	Environmental Contamination in Russia and Projected Risks
12:00 noon	Lunch
1:30 p.m.	Non–Ionizing Radiation Basics and Possible Risks
2:30 p.m.	Non–Ionizing Electromagnetic Radiation Risks
3:45 p.m.	Break
4:00 p.m.	Greenhouse Effect and Associated Risks
5:00 p.m.	Session Ends
6:00 p.m.	Cookout at Brian Head Campground (hot dogs)

Sponsor

DRI
G. Sandquist – U of U
K. Schiager – U of U
B. Church – AMESH – DOE

L. Anspaugh – LLNL

G. Martin – EPA
L. Anderson – PNL

M. Slaughter – U of U

DRI

Friday, 7 Aug. Activity

7:30 a.m.	Continental Breakfast
8:00 a.m.	Monitored Retrievable Storage (MRS)
9:00 a.m.	Advanced Nuclear Reactors (PRIME)
10:00 a.m.	Break
10:15 a.m.	Environmental Restoration Activities at NTS
11:00 a.m.	Laser Fusion Research at LLNL
12:00 noon	Lunch
1:30 p.m.	Amargosa Nuclear Museum
1:45 p.m.	Getting Kids Involved in Science
2:00 p.m.	Summary of Training Session Evaluation of Session Administrative Details
3:00 p.m.	Farewell and Dismissal

Sponsor

DRI
M. Slaughter – U of U
G. Sandquist – U of U

ERWM – DOE – NV
R. Gwynn – U of U

K. Garey
C. McWilliam – DOE
G. Sandquist – U of U
N. Cooper – DRI
N. Cooper – DRI
G. Sandquist – U of U

NOTES:

ATTENDEES
SUMMER TRAINING SESSION
Brian Head, Utah
August 3–7, 1992

ALAMO	Dell Sullivan	Alternate Manager
AMARGOSA VALLEY	Kenneth G. Garey	Station Manager
AUSTIN	William S. (Bill) Cox	Station Manager
BEATTY	John C. Lisle	Station Manager
	Richard A. Johnson	Alternate Manager
CALIENTE	Judy A. Foremaster	Station Manager
	Brent H. Perkins	Alternate Manager
CEDAR CITY	Glade V. Sorensen	Station Manager
	Donald Newman	Alternate Manager
	Melvin Baldwin	Emeritus
DELTA	Thomas S. Judd	Station Manager
	Beverly Jean DeWyze	Alternate Manager
ELY	Rebecca S. Murdock	Station Manager
	Gloria Ann Mullen	Alternate Manager
GOLDFIELD	Myron A. Johnson	Station Manager
INDIAN SPRINGS	James M. Hopkin	Station Manager
	Larry L. Hathhorn	Alternate Manager
LAS VEGAS	Don M. Curry	Station Manager
	David J. Peltz	Alternate Manager
MILFORD	Dale E. Jensen	Station Manager
	Morden Leon Gay	Alternate Manager
OVERTON	Nicklas J. Bowler	Station Manager
	Jack W. Nelson	Alternate Manager
PAHRUMP	Albert J. Giannotti	Station Manager
	Daniel J. Donnelly	Alternate Manager
RACHEL	Christy S. Castleton	Station Manager
	Ruth Agee	Alternate Manager
SALT LAKE CITY	Gary M. Sandquist	Station Manager
ST. GEORGE	John F. (Jack) Heppler	Station Manager
SHOSHONE	Brian W. Brown	Station Manager
	Kenneth W. Smith	Alternate Manager
TONOPAH	Laurance (Larry) Woods	Station Manager
	Mark E. Howard	Alternate Manager

Cont. ATTENDEES
SUMMER TRAINING SESSION
Brian Head, Utah
August 3–7, 1992

Rocky Flats Participants:

Richard Borinsky
William Jones
Ted Matsuo
Robert Morgenstern
Mr. Kim Natale
Lonnie Newton
Forrest Shoemaker
Douglas Smith
Dudley Weiland
Shawn Yasutake

Science Teachers:

Betty Barnum	Nebo School District	Springville, UT
Dave Curry	North Tahoe High School	Tahoma, CA
Todd Dice	Cimarron–Memorial High School	Las Vegas, NV
Danny Green	Cimarron–Memorial High School	Las Vegas, NV
Mitchell Johnson	Cimarron–Memorial High School	Las Vegas, NV
Steve Johnson	Churchill County High School	Fallon, NV
Ruth Jordan	Cimarron–Memorial High School	Las Vegas, NV
Duane Loesch	Cimarron–Memorial High School	Las Vegas, NV
Gill Mullen	Cimarron–Memorial High School	Las Vegas, NV

STATION MANAGER REPORTS

BRIAN HEAD, UTAH

August 3, 1992

Nate Cooper, Desert Research Institute:

Nate

Nate gave a little background of the inception of the Community Radiation Monitoring Program. As an outgrowth of the Three Mile Island effort in 1978, EPA, DOE and a number of others were doing some extensive monitoring in the area and it was evident that the public was very interested in what was going on.

Upon returning from that event, Chuck Costa and Bruce Church were the people who conceived the idea of a similar thing around the Nevada Test Site. In the early fall and winter of 1980 the plans were put together to go into the communities and hire people who would be respected in their community, and who could act as a liaison between the DOE and their community. Criteria were put together for the kind of people to be hired. It was to be someone familiar with science, which indicated teachers. In going out to make the selection, community leaders, school principals, superintendents and community officials were contacted to get their recommendations as to who might be best in their communities. That hiring resulted in a number of people who are here with us today. As Mr. Nelson said earlier, "let people know what was going on at the Test Site." Fifteen stations were put together, including the station at the University of Utah that Dr. Sandquist runs. These were to enhance the EPA-wide network that already existed. Fourteen other stations, one in California at that point, two in Utah and eleven in Nevada. Ten of those managers hired then are still involved in the program today, and that was eleven and a half years ago. When the program was conceived there was no way to know how long it might last. Since it has lasted this long some of the teachers that were initially hired have retired and others have replaced them.

Nate then asked Bruce Church to come forward.

Bruce Church, U.S. Department of Energy:

Bruce

When the program was started we really didn't know how long the program would be successful. There were two major concerns; one was turnover in personnel, and the other was the worry that vandalism would break the budget. Now, eleven and a half years later, neither of those problems have materialized. There has just been minor incidents of vandalism, with minimal expense incurred. The personnel have presented another kind of problem. We had to develop a program of what to do with the people who have served a distinguished period of time and moved onto other kinds of events in their lives.

Today we would like honor one of our Station Managers who we now have graduated into what has been termed the "Emeritus" program. It has been developed for two reasons, one we want

to maintain the continuing activity of teachers, but we don't want to lose the wisdom and experience of people who have retired. From those concerns and interests the "Emeritus" program has been initiated. Would Mel Baldwin of Cedar City come up and receive his "Emeritus" plaque. The Emeritus program provides a means where the Emeritus members can come back to the Summer Training Session, so they can maintain contact with the training and the new programs and information that is provided. They also stay on the mailing list. Also, Cedar City can have a back-up Station Manager when needed.

The inscription on the plaque reads, "Certificate of Appointment to the position of Station Manager Emeritus. With gratitude and appreciation this certificate is presented to Melvin D. Baldwin for service to his community, his state and his country through his dedicated efforts as Station Manager in the Community Radiation Monitoring Program, Cedar City, Utah, July 1981 – September 1991."

Mel Baldwin, Cedar City, Utah Station Manager "Emeritus":

Mel

Mel said that he sure enjoyed all the people in the program. It sure is a lot bigger group than we started out with. He expressed his thanks and appreciation.

Dell Sullivan, Alternate – Alamo, NV:

Dell

Rick couldn't make it. He would like to be here but he's in school. Rick uses the station on science projects, and takes students to the station quite often. The accelerated high school students take a tour of the Test Site each year. On the community attitude toward the monitoring program, the purpose was to show people that what they were hearing from the Test Site was right, and to have the stations in the community to give the people a sense of security. Therefore the purpose of the monitoring program has been and is being accomplished in Alamo. There doesn't seem to be any concerns of radiation. The biggest concern in Alamo is the water war with Las Vegas. Most of the residents know the purpose of the station. The people that show the most interest are the tourists that come through. The equipment seems to be working well. Anytime you call EPA with a problem they see to it right away. Over the last year people have contacted him inquiring about where to make contact for cancer victim claims. Dell made contact with an attorney in Ely who gave him some information. Congress allotted some monies for particular types of cancer and if it's accepted you can get \$50,000. The attorney makes contact with the medical doctor or hospital to find out the cancer type, and history of it. You have to have proof that you lived in the designated areas during the above-ground testing.

Ken Garey, Station Manager – Amargosa Valley, NV:

Ken

The station is in the shadow of Yucca Mountain, and the station location is ideal at the

community center. It is also near the library and clinic and there are a lot of visitors who come by. There are a lot of inquiries about the station. The science teacher brings the children over for a tour of the station, and this has inspired a couple of science projects. The Yucca Mountain public information meetings are held in the community center. One was a public awareness group and Ken was asked to be on the speakers list, so he responded to questions asked. The problems at the station are few, mostly mechanical. Suggestions of improving the program, keep up the good work. Ken expresses appreciation for receiving the news clippings. He puts them to good use. He recommended that the monitors checklist could be simplified. He suggested that they be put into one form and put an X or a 0 in the column. He would also like to see climatological data acquisition at the station and have it displayed and recorded.

Bill Cox, Station Manager – Austin, NV:

Bill

Tom Brannan is the school principal in Austin and Alternate Manager at Austin, but he was not able to attend. The population is decreasing in Austin. There are less than 200 residents. The sixth grade is being moved down to the high school and elementary school, so this year he will be teaching science to the 6th through 12th grades. He will have more of an opportunity with 6th graders to start at an earlier age with radiation topics. One event that happened this past year was that one teacher got a brain tumor. She had lived in Austin all her life, so Bill put her in contact with the Downwinder program, and with the help of Nate and others, that really helped out. She is related to many in the town so it gave a good testimony of the program. A few people stop by the station, but not as much as in the past years. There has been a lot of interaction with the students, taking them to the station. Most of the students understand the station function. When changing the filters the students often come over to check the readings on the instruments. Herb has helped out on a few things and there have not been many problems.

John Lisle, Station Manager and Rick Johnson, Alternate – Beatty, NV:

John

First he thanked Nate and Juana for the great room and facilities. The outstanding events were that they moved into a new high school, and Beatty finally got about 7 inches of rain after 5 years. The earthquake that occurred shook us up quite a bit. Nevada is the 4th largest gold producing country in the world, and part of that is due to Beatty. Bond Gold, a large mining company there, poured 23,000 ounces of gold in January. It is predicted that Beatty will pour about 300,000 ounces this year, and they will eventually do about a million and a half ounces per year. In the spring they are going to start a new construction phase, and they will almost double the workers. John has talked to several groups and service organizations and most of them say they will get back and set up a schedule for presentations. He showed the slides of the station to the physical science class. The school is located about a mile from the station so its difficult to get the students to the station. He felt that it was great bringing the other science teachers here, and bringing the Nevada Desert Experience here too. Beatty has an annual job

shop, which is their annual career day at the high school. John contacted Nate and he brought up two archaeologists, one a lady, which was a big hit. There were several young women that didn't realize that a woman could become a scientist and work outside. The real big hit of the day was an aspiring astronaut, a geologist. Each session was about 20 students, but sometimes there would be about 40 students in that session. Last year JoAnne Burrows brought some people up from DOE, and this year Nate brought them from DRI. Next year we'll contact EPA. About a week ago John was doing the station about noon and a person stopped by. He thought it was a weather station and wanted to know why it was so hot. John told him it was because DOE had been setting bombs off and that has moved us closer to the sun. (And then explained his weird sense of humor.)

Rick

In changing the station out people frequently stop by and ask about the station. Their interest was mainly out of curiosity, not of concern. The way the station is arranged, the barograph is right next to the compressed air sampler, and that seems to set off the barograph sometimes. His only suggestion to stop that vibration was to put it in an isolated place. He had talked to one of the EPA service people, and he said that problem wasn't unique to their station.

Judy Foremaster, Station Manager and Brent Perkins, Alternate – Caliente, NV:

Judy

Judy works at the Nuclear Waste office in Caliente. There is a public information office set up and there have been a lot more people come in. She has had several inquiries about the radiation and cancer, and inquiries about the cost of the station. She has a couple of tours set up for the NTS in early fall. The equipment runs good.

Brent

Brent arranged with Nate for Ken Giles to visit Lincoln County High School and Meadow Valley Middle School in April. There were about 115 students involved. Unfortunately they didn't have time to visit any of the elementary schools, however, he wants to set that up for the fall and hopefully get all three elementary schools.

Glade Sorensen, Station Manager and Don Newman, Alternate – Cedar City, UT:

Glade

The significant events were that he also retired in June, there were about 8,500 participants in the Utah summer games at SUU, and the Shakespearean Festival continues to be a success. The community growth is increasing and the students attending SUU this year are going to have trouble trying to find places to live. Cedar City registered about 30 earthquakes over 24 to 48 hours during that particular time on the seismograph at the University of Utah. The community has a positive outlook regardless of what goes on. Most of the older residents are aware that it is a radiation station, however the new residents moving in think it is a weather station. The science classes are familiar with the station, and explain it to the parents and the visitors while checking out the station. People call concerning weather conditions that have

taken place there. The Mayor is a teacher at the Cedar High School, and he has been told that there is a speakers bureau available to speak to civic organizations. Most people say they will make contact when they are ready to schedule a presentation. The air sampler has been changed out, but sometimes they have had to reset it because the timing device doesn't take over. There was some vandalism in the spring where the solar panel was shattered with mud and broken. Sometimes lights have been out two or three weeks before they could be replaced. No suggestions for improving the program. Glade feels that it is very good and enjoys being here.

Don

Looks like there is more community interest. He is involved with scheduling presentations at this time.

Tom Judd, Station Manager and Beverly DeWyze, Alternate – Delta, UT:

Tom

There isn't anything new going on in Delta. The Intermountain Power Project is up and running and has been for some time. The community attitude toward the Community Monitoring program is apathetic. About the only contact he has with the public is through the schools. He continues to use the overlays that JoAnne provided. There has only been one little problem with the PIC which was fixed as soon it was reported. There is the mysterious disappearance of the PIC cassette tapes. There are about six or eight in circulation, and for some reason there will not be one to check out, then the next day two will show up. Tom had no suggestions to improve the program, everything is great. It doesn't take much time to see to the station, but provides a valuable service to the community. He expressed appreciation to EPA. They are very willing to help you with any questions. It's great to work with this group.

Beverly

Last Saturday Wayne Owens, Representative from the State of Utah and a Senate candidate, was in Delta. In talking with him after his speech, Beverly mentioned the Community Radiation Monitoring program and asked what his feeling were on nuclear testing. Mr. Owens said that he was opposed to it. He said that safety is no longer a factor. He was present during a court case where it was basically proven. Beverly felt that was because of the effect of this program, there is a change. She appreciates the opportunity of getting to know all the people here and learning so much.

Rebecca Murdock, Station Manager and Gloria Mullen, Alternate – Ely, NV:

Rebecca

There were a few events in Ely this year. A structural analysis was done on the old middle school three-story building, which was determined to be unsuitable. It could fall apart in even a moderate earthquake. A radon canister test was also done on it, but EPA hasn't gotten back with the results. The school board borrowed 1.8 million dollars to build a new industrial arts center for the high school. Ely just had a special election to approve the use of tax dollars to

fight Las Vegas for the water grab. A guest speaker visited her class from the local power cooperative and talked about Mt. Wheeler getting some of their power from Glen Canyon Dam. The speaker said that the best energy option is to go nuclear. Clean coal is too expensive so is not a viable source. She took her 150 sixth graders to visit the station, and the students really got excited when they saw the numbers jump up. The interest from the adults is usually when they see the TLD, then she explains the station operation to them.

Gloria

There is a little park across the street from the station where the junior high and high school kids hang out, and usually doing things that aren't real positive. She has gone over and talked to them and invited them to the station for a tour. There is an increase in people stopping by. There are so many visitors in Ely who show an interest in the station. There was a group that came by who lived near Three Mile Island, and had no idea what the station was. They are writing to her and getting more information so they can check into their own area. Ken Giles says that he can't come by the station without having people stop him and inquire about it. She feels more comfortable giving tours because of training sessions such as this. A talk and tour of the station has been included in the community college class she teaches at night. After the test and the tours, she offers ten bonus points to get their honest feeling about the station. A number of the students feel a comfort in having the station in town. She thanked JoAnne for the overhead slides. They work nicely for the tours. Art Jarvis came and gave a talk on radiation biology and it was video taped. She felt that would be the best way to show her other students, since she has a change of jobs and teaches at the prison where they can't go on tours.

Myron Johnson, Station Manager – Goldfield, NV:

Myron

Alternate Tina Tatum couldn't make it so she is taking care of the station. Goldfield has been very quiet. The mines have been shut down and the population has decreased. The school enrollment is the lowest in seven years, with classes from kindergarten through eighth grade. He makes regular contact with the teachers to see if they would like a tour of the station. The community attitude has been rather mundane. They are all aware that the station is there and its function. Yucca Mountain has created quite a bit of interest. Myron usually goes to the station every day on a regular schedule, but went over earlier the day of the earthquake, and some people came by inquiring if there was any danger. He showed them on the PIC and talked to them to allay their fears. There have been about ten or twelve people stop in at the station as he attends to it, mostly tourists. There have been inquiries from people who are looking at relocating in clean air locations. Myron is on the local emergency planning committee, so he has to notify the fire department of all hazardous materials and reportable levels that they have. It is the responsibility of the committee to handle any emergency situation. At the time the group was established radiation was the principle interest, but there is now more interest of what is transported on Highway 95. The transporting of hazardous materials, gas, oil and chemicals on the highway poses much greater concern than does the radiation. However, there is quite a bit of incorrect information being passed around on the containment casks for nuclear

hazards. One is that the containers can't be considered safe because the prototype was the only one tested, the rest is computer simulated, and they don't trust the computer. Myron doesn't agree and has tried to prove the point that containers have been thoroughly tested and are safe. The problems with the equipment are minimal, and the few problems are taken care of immediately by EPA. He is pleased with the program and its operation. It is very well organized.

Jim Hopkin, Station Manager and Larry Hathhorn, Alternate – Indian Springs, NV:

Jim

The big events in Indian Springs this year were the considerable amount of rainfall and more than their share of earthquakes. There seems to be more community interest in the station. More young people have made inquiries. There were also inquiries and interest from some newcomers who were somewhat concerned about radiation. He took more students to the station this year and explained it to them. A group of G.I.'s were out walking and inquired about the station. He has made an attempt to get the resident Metro officers and Highway Patrolman to come by for a station tour, however, there has been such a turnover that it hasn't happened. The equipment has operated well.

Larry

He arranged a student tour of the Test Site which went very well, and he frequently takes his students on a tour of the station.

Don Curry, Station Manager and David Peltz, Alternate – Las Vegas, NV:

Don

There are a couple of things that have happened that he felt was important in Las Vegas, one was the International Nuclear Waste Disposal Conference that was held in the spring, coordinated by Richard Powell at UNLV. It was really outstanding, and the best thing was the amount of material that was received and applicable to the classroom. There have been no inquiries about the station, and part of that is probably because of the location in the parking lot on the campus of UNLV. The only contact he has had is with joggers who stop and ask if it is a weather station. He doesn't see any community attitude, but would like to see a change, everything currently focus on water issues. Most interactions transpire through students with classroom activities. He also has conversations with parents regarding student projects. Suggestions for improvements would be the utilization of a video that would explain the station operation and what the radiation monitoring program means to the Las Vegas community. This will be one of their goals for next year. Some of his students have already worked on a video. Daryl Thome' made it possible for them to go through all the EPA labs and they taped some of the labs where the lab personnel explained the function of the laboratory. He saw it as a positive thing because it broadened the perspective for the use of the monitoring equipment. The only way he could foresee getting information to the people in the Las Vegas community is through the schools by educating the students who will be moving out into the community.

Dale Jensen, Station Manager and Leon Gay, Alternate – Milford, UT:

Dale

There have been no outstanding events in Milford. New people have been moving into Milford and Beaver County out of California, especially since the riots in Los Angeles. There has been little or no change in the community attitude toward the program. Tourists occasionally come by and inquire about the station operation. He uses the equipment and data in his science classes and also takes the students to the station. The first vandalism occurred when the TLD's were broken off last winter. Leon then reported that one was returned to the station. Sometimes they run out of mailing labels and envelopes, but everything else seems to be going along fine. Dale suggested that an installation of an all-weather information board be put at the station that would describe what is taking place, rather than just a little sheet. There are a lot of people that go by the station and this information should be there.

Daryl Thome'

Daryl said that was a good idea.

Leon

One of the recent developments is that natural gas has come to Milford, and that is a significant event. Stay tuned for further developments on the proposed pig farm for Milford. The preliminary estimates on the pig farm is they will slaughter 3,000 to 8,000 pigs a day. The natural gas line has brought in a lot of new people. He has seen them go by and check out the station.

Nick Bowler, Station Manager and Jack Nelson, Alternate – Overton, NV:

Nick

Moapa Valley is really undergoing quite a bit of growth. The community is getting to be an attractive alternative for Las Vegas. There will be a new high school next fall, and the elementary school has a 12-room addition, plus a new elementary school. The primary issues in our community have basically been the Bureau of Land Management (BLM) issues with the tortoise restrictions. It has a lot of the ranchers concerned. There doesn't seem to be a lot of concern or contention about the NTS or Yucca Mountain issues. The community is aware of the station. He talks to the students and has given tours to students and scout groups. Nick said that he likes to wear his TLD badge in class as it creates a lot of interest. There has been no major problems with the instruments. He suggested that possibly a seismograph could be included at the station, considering all the recent seismic activity. He expressed appreciation for the speakers bureau that has come to the school and civic organizations.

Al Giannotti, Station Manager and Dan Donnelly, Alternate – Pahrump, NV:

Al

Greetings from the garden spot of Nevada. The community is growing tremendously. There is a new school and it is full to the rafters. There were also ten new classrooms added last year.

Dan Donnelly is the new Alternate Station Manager and he does a great job. He helped out tremendously when Al was in an accident. He took care of the station for about two months. Mr. Robison of the Yucca Mt. office was the speaker for the Chamber of Commerce and he gave a very good talk. There was great interest from the community on that topic. There were five of our students that participated in the Science Bowl and there was great competition in Las Vegas. Rudy Cruz provided a great experience for these young people. The students who are very intelligent finally had something they could work towards other than just going for scholarships at the end of the school year. Students can work throughout the year to participate in the upcoming Science Bowl. The new accommodations during the winter training session were terrific and during the summer session are already a lot better. Nate and Juana picked a winner in making these choices.

Dan

Dan was working with a junior high school teacher and another science teacher and they made arrangements with the principal to get a bus so that once a month they can take students of the combined classes to the station in conjunction with classroom discussions. There were about three breakdowns reported with the equipment and they were readily taken care of. During the earthquake the barograph became a seismograph.

Nate

We are still working on moving the station closer to the school.

Christy Castleton, Station Manager and Ruth Agee, Alternate – Rachel, NV:

Christy

Rachel is probably one of the few locations in the community monitoring system that does not have a school. She has learned a lot from the program and has gained a lot of knowledge. Rachel still maintains its standing as the UFO Center of the World. The second annual UFO conference was held there last week. There was another wedding this year, and that was the biggest event there. The attitude of the community is very positive. Most of the people that live there are aware of the station and know what it's for, and are comfortable with the Test Site. Probably because of that there are very few interactions. A few visitors pass through and ask questions about the station in the summertime on route to Yosemite National Park and the Utah parks. Christy had an interesting experience when she went to EPA for whole body count. Nate and Chuck Costa were there with a reporter from New Mexico. She was filmed at the monitoring station in Las Vegas, and her family was questioned by the reporter. Nate also did an overview on what the station was about. The equipment has been functioning very well. Suggestions for improving the program; Nate showed up to take pictures, it was raining and she and Ruth looked like drowned rats, so she would like advance notice if they are going to do filming.

Gary Sandquist, University of Utah – Salt Lake City, UT:

Gary

Our station is at the University of Utah, located just outside his department. He recalled that

when the station was going to be installed he had in mind of putting it behind an iron-gated barricade, as he felt the station would be better protected. However, Bruce Church was visiting and proposed that it would be better to locate it outside the reactor station. The station is highly visible, since there are about 5,000 students that walk by it each day. Most of the people in the College of Engineering are aware of the station. Occasionally both faculty and students ask about it. They use the station as part of the data base for the reactor operations. Just to show you that it does work, they had a call from EPA a few days ago asking what was going on there. The PIC was reading 160 Micro R per hour a few days ago, and in checking back they had pulled a hot sample out of the reactor and made a transfer. It was only a short period of time, but it was picked up by the station and the satellite imagery. The station is about 50 feet outside the reactor. The equipment has run very well. There was a little vandalism early in the program, but they put a padlock on and it has kept that down. The station is very important as it provides a data base. When Wayne Owens was doing the hearings in Salt Lake he came up to talk about the station operation. He hopes the program will continue to exist. Obviously, if the testing ceases at the NTS, he is not sure there will be the need to continue on, but does hope the program can continue to make a contribution. There are still some significant restoration problems that have to be done at all of DOE's major sites where materials have been developed and used, so public health and safety are items of great concern. That is the focus of the training session this time. There will be talks on risk assessment and public health and safety, and that is always an area of great concern and issue.

Jack Heppler, Station Manager – St. George, UT:

Jack

He complemented Herb on the good work the route people do. They make this program operate very efficiently. They have done an outstanding job for 12 years. The community continues to grow. When he moved to St. George in the 1960's there was a population of about 8,000. There are now 50,000 and still growing. There is an influx of about 15,000 people every winter when the snowbirds come in from the north that add to the economy of the community for about 4 or 5 months. St. George has been listed in a brochure as the 2nd best place to retire in the United States. They received the radon tests back after the last training session very promptly, and no problems were indicated. He doesn't see a lot of change in the community attitude. There seems to be a lot of support in the area in spite of being in the middle of the Downwind area. Jack had recently met with a couple of groups of people, 12 in one group and 15 in another, who came up collectively from California to purchase property in St. George and move there. They had read the horror stories about radioactive tomatoes and such, so the Chamber of Commerce asked him to meet with these people. He averages about one phone call a week from people referred to him by the Chamber of Commerce, and in some cases by EPA and DOE in Las Vegas, to talk about the any problems. The one thing that has been interesting, thanks to DOE and EPA and others, there has been an issue started called "Partners in Environmental and Technical Education Repeat" in which DOE and EPA have been big supporters. Thanks to the program that started about a year ago, Dixie College will

next fall begin offering full hazardous material training and associate science degrees in that area. Dixie College is one of eleven schools that have been accepted into that program. He appreciated the support and comments given by Nick Aquilina at the Las Vegas meeting last year, and the support from various other people. Rudy Cruz has been there every time and they have appreciated that. It is going to be a super program. No suggestions for improving the program. The facilities are wonderful.

Brian Brown, Station Manager and Ken Smith – Shoshone, CA:

Brian

Shoshone is the only monitoring station in California. There have been no significant events in the community. They are in a declining population and employment. There are no strong objections from the community. There is an annual anti-nuclear protest that goes on at the NTS front gate at Easter time. The Tecopa hot baths are public, so they get annual caravans of folks in gaily colored school buses, so for 4 or 5 days there will be 50 or 60 of those folks camped out there before or after the Test Site protest. The PIC went out for awhile, but it has been replaced. The service is great from EPA. If there is a problem it gets fixed immediately. The last time the noble gas sampler was put on line there were some problems with the bottles not pumping up, but made a phone call and they got fixed. May want to move the station in Shoshone because the clinic, which is the only thing near it, is closing in two weeks so the station will be out by itself. There is now a functioning volunteer fire department in the community, and at some point would probably like some first response hazardous material training, because they are on the route to Beatty.

Ken

There is one community member that checks on the station at least once a month. Some of you may remember her. Lisa Lehmann who was one of the original Station Managers. Ken did radon sampling in the classrooms through the Department of Environmental Health and they are still waiting for results. Things are working pretty well.

Larry Woods, Station Manager and Mark Howard, Alternate – Tonopah, NV:

Larry

As Nick Aquilina mentioned, Tonopah got hit hard by the Stealth flying off to New Mexico. In town they haven't really experienced a lot of people being laid off. Some of those that did get laid off have chosen to stay around thinking that in the next year or so there may be another project out there, so they are waiting for another job. One of the biggest highlights for the students was the opening of the McDonald's restaurant. There has been rumors that the Cyprus mine will open up again and this time they are going for copper, so Tonopah's economy goes up and down. The community attitude is about the same, kind of indifferent. DOE has brought some programs to the schools. The 5th and 6th graders and the high school chemistry class got the ABC's of Radiation by Bama McKnight, and the 7th and 8th Civics classes got Downwind Radiation Effects by Dave Wheeler. The Women's Sorority heard about Consumer Related Radiation and there were another two or three presentations given to Tonopah

groups. He thanked DOE for bringing the program to their community. The University of Nevada, Reno, contacted him in the early part of July wanting to install a radon detector. UNR, with the EPA, have sampled 2,500 homes within the state of Nevada, and they are trying to put this together, not only testing the homes but also the soil. They took a one-meter soil sample, and it was hard to find that much soil in Tonopah. Larry has a sampler above the ground and three radon detectors in his back yard. They are to be left there 30 to 40 days. They are trying to do a very thorough radon study within the state of Nevada. There have been no problems with the equipment.

Mark

The speakers in his government and history classes gave good presentations. His students got quite involved in discussions with the people that spoke about Yucca Mountain and nuclear things. It was very excellent and worthwhile.

ROCKY FLATS STATION MANAGERS REPORT

Bonnie Pauley — EG&G, Rocky Flats:

Bonnie

Bonnie introduced the Station Managers:

Shawn Yasutake, Alternate Station Manager from Arvada, teaches at Arvada Junior High School. He was hired this summer.

Lonnie Newton, Station Manager from Arvada, teaches at Arvada Junior High School.

Dudley Weiland, Station Manager from Arvada, teaches at Peck Elementary. He is full of all kinds of ideas.

Kim Natale, Station Manager from Arvada, is a physics teacher at Standley Lake High School.

Doug Smith, Station Manager from Westminster, teaches at Northglenn High School. Doug has been on line for about a month.

Bill Jones, Alternate Station Manager from Arvada, is Department Chair at West Arvada High School. He said that the difference between their community and some of ours is that they just made it legal to keep a pig as a pet.

Ted Matsuo, Alternate Station Manager from Arvada, teaches at Skyview High School.

Rick Borinsky, Station Manager from Broomfield, teaches at Broomfield High School.

Forrest Shoemaker, Alternate Station Manager from Arvada, teaches at Standley Lake High School.

Bob Morgenstern, Alternate Station Manager from Broomfield, teaches at Standley Lake High School.

Dudley Weiland, Station Manager:

The Rocky Flats group are all new kids on the block, as all of them are just starting. There is one station in operation, as of December 1991, and four additional stations will be on track by January 1993. The operational station is operated by himself, Shawn and Lonnie. The Rocky Flats station is located at the Arvada Library, with a population of 90,000 and located five miles southwest of Rocky Flats. Rocky Flats has been this secretive place for many years, until the advent of Bob Nelson and others, so there has been much concern about it. With the installation of the station, he and Lonnie have talked to several groups, have done many things with the community, and the community is very excited about this. There is now a new aspect to the entire educational and community program in the city. They have had press conferences, open houses, and have done various things. He and Lonnie have talked to the Arvada City Council and they are very interested in the whole aspect of this program. They also have

portable radon meters that are digital readout, so they can be taken into the classroom and in about a half hour period the students can get a picture of the radiation in the buildings or take it into their homes. There are to be modems at each one of the stations where they can get information to the schools. They are working with the City of Arvada to arrange these things.

The main difference with their location is that the CRMP are in small communities and schools, and their high schools are 1200 and up.

The Fall Festival parade is coming up with the celebration of the harvesting of all the crops. This year they plan to enter their operation into the parade.

Lonnie Newton, Station Manager:

They are experiencing some of the problems that the CRMP probably experienced some 12 years ago in setting up the stations and getting all the bugs out. It was necessary to match the color of the instruments to the trim of the library, and the equipment absorbs the light, so it gets quite hot in the boxes. Hopefully they will get all the things worked out. The only suggestions he would have is to establish some kind of networking in getting their program going. You have a wealth of information they hope to tap into it.

JoAnne

Would it be helpful to give you the names and addresses of all the Station Managers? Now you have the opportunity to meet them you could just call them and share and discuss some of your problems or experiences.

Nate

We are happy to have you here from Rocky Flats and we hope to see you next year.

GUEST TEACHERS REPORTS

There were nine science teachers from schools in Nevada, Utah and California. These are the teachers and their comments.

Betty Barnum, science teacher –

Nebo School District, Springville, Utah:

Comments: Excellent training session. We received an amazing amount of information. She suggest that a requirement to attend this workshop be a commitment to network the information. A participant should hold at least one mini –workshop with the other appropriate science teachers in their schools. Hopefully, they will go even further. She hopes more teacher training sessions can be held for a larger number of teachers. Betty is highly motivated to help their state directors include nuclear science basics in the elementary curriculum, then students will be ready for more in the secondary level.

David Curry, chemistry/physics teacher –

North Tahoe High School, North Tahoe, California:

Comments: Loved the collegiality, unbiased presentation of nuclear science, and technical presentation. An added pleasant surprise was the quality of accommodations and events. Thanks so much!

Todd Dice, earth science teacher –

Cimarron – Memorial High School, Las Vegas, Nevada:

Comments: The Risk Assessment and Risk Perception presentations were excellent. He was particularly interested in the Non – Ionization Radiation Risks presentation. He enjoyed the supporting research that was cited. Todd would like to see more research studies supporting the data presented with the risks/cancer deaths resulting from various sources of ionizing radiation.

Dan Green, Science Department Chairman, chemistry/physics teacher –

Cimarron – Memorial High School, Las Vegas, Nevada:

Comments: This was an excellent program.

Mitchell Johnson, physics/math teacher –

Cimarron – Memorial High School, Las Vegas, Nevada:

Comments: Could be adjusted for individual subject effects on life, where it is found, mining procedures (earth science) chemistry of bonding changes by excitation. It seemed to be geared right for physics but some of my friends may not be able to use much in their other science classes, though the Risk Assessment can be used by all. Overall it was great.

Steve Johnson, chemistry teacher –

Churchill County High School, Fallon, Nevada:

Comments: He found the entire experience very meaningful. The organization and selection of speakers was outstanding. He would happily participate in any related program. Matters of energy consumption and production are really related to national security. We can not give such issues trivial treatment and your session brought this to light.

Ruth Jordan, chemistry teacher –

Cimarron – Memorial High School, Las Vegas, Nevada:

Comments: It is essential that science teachers, especially chemistry and physics teachers be exposed to current information and developments in this field. Again it would be helpful to have a representative of a utility present industry. If you need help locating an appropriate representative you could contact Richard Jordan, Manager Gas Supply, Southwest Gas Company, Las Vegas, NV 89117, 799-8969.

Duane Loesch, biology/physiology teacher –

Cimarron – Memorial High School, Las Vegas, Nevada:

Comments: Very good experience. Even though he teaches life sciences and not physical science the information is useful, particularly the risk factors that can be used to put the risk of nuclear energy in the correct perspective. Broaden teachers at all levels, particularly at the elementary where they are weak in science.

Gill Mullen, science teacher –

Cimarron – Memorial High School, Las Vegas, Nevada:

Comments: Great experience. Thank you for making this opportunity available to teachers. We need to get the information and facts out to the public so that proper decisions relating to nuclear energy and what the various agencies are doing to make life safe for each of us and our families.

APPENDIX B

Documentation of Outreach Efforts

LAS VEGAS

AUG 17 1992

**RECEIVED
WATER RESOURCES CENTER
DOE PROJECTS**

August 13, 1992

Mr. Nate Cooper
Water Resources Center
Desert Research Institute
P.O. Box 19040
Las Vegas, Nevada 89132-0040

Dear Mr. Cooper:

Thank you for the opportunity to attend the CRMP Training Session at Brian Head. The program was terrific and I gained a tremendous amount of information. It was especially beneficial for me to hear current issues addressed and discussed by experts. The arrangements and organization certainly contributed to the success of the workshop.

Involvement of teachers in this program is an extremely effective way to get this information into the communities. Hopefully, there will be even greater opportunities for more teachers to participate in these workshops. Maybe students could even become involved in contests or competitions. There are many great possibilities.

Sincerely,

Betty K. Barnum

cc: Juana Blackburn

1530 E. 50 N.
Springville, Utah 84663

EG&G ROCKY FLATS, INC.

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LAS VEGAS

AUG 20 1992

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DOE PROJECTS

August 17, 1992

92-RF-9408

Nate Cooper
Desert Research Institute
755 East Flamingo Road
P.O. Box 19040
Las Vegas NV 89132-0040

Dear Nate:

Al Howard and I would like to thank you, the Department of Energy, Nevada Operations Office, Dr. Gary Sanquist, and the Environmental Protection Agency for inviting the Rocky Flats Plant (RFP) station and alternate station managers to the annual summer Nevada Test Site (NTS) Training session.

The time spent at BrianHead, Utah, was a challenging learning experience for the station and alternate station managers. The guest speakers provided additional insight not only into the Community Radiation Monitoring (ComRad) Program but to our teachers' environmental awareness. Your professionalism, organization, courtesy, and time provided to RFP and the RFP station and alternate station managers was appreciated.

We are looking forward to working with you and your colleagues in the future. If funding and scheduling allow, we would like to keep open the option of attending the summer training session in conjunction with the NTS program in FY93.

Juana Blackburn was a gracious hostess; RFP station and alternate station managers expressed their gratitude for her courtesy and friendliness. Once again, it was a pleasure to work with the NTS Community Radiation Monitoring Program (CRMP) personnel and we look forward to future interactions with you on this program.

B.J. Pauley
ComRad Program Manager
Air Quality & Chemical Tracking Division
EG&G, Rocky Flats Plant, Inc.

cc: E.A. Howard
T.G. Kalivas
G.H. Setlock

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

OFFICE OF RESEARCH AND DEVELOPMENT
ENVIRONMENTAL MONITORING SYSTEMS LABORATORY-LAS VEGAS
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LAS VEGAS

MAR 20 1992

MAR 23 1992

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Nate Cooper
Desert Research Institute
P.O. Box 19040
Las Vegas, NV 89132-0040

Dear Nate:

On February 12, 1992, I gave a presentation on the Deer Migration Study to the Country School at Uhalde Ranch. Nine children and eight adults were in attendance.

On March 4, 1992, I gave a presentation on the Deer Migration Study to the Rotary Club at Pahrump, Nevada. 23 people were in attendance.

Sincerely,

A handwritten signature in cursive script, appearing to read "Kenneth Giles".

Kenneth Giles
Environmental Protection Assistant
Field Monitoring Branch

cc: Charles Costa, NRD
George Martin, NRO
Herbert Maunu, NRO

TUESDAY, NOVEMBER 12, 1991

DOE using teachers to monitor Hanford

Non-experts reassure skeptical public
the environmental impact caused by the release.

By CHRIS SIVULA
Herald staff writer

A few years ago, the operators of the Three Mile Island nuclear plant wanted to release radioactive gasses trapped in the containment dome.

Public sentiment was already running against the reactor following the 1979 nuclear accident that produced the gasses. Despite assurances from the experts that the dose to would be minuscule, near residents remained skeptical.

Someone at the reactor reasoned that if people didn't trust the experts, then maybe amateurs ought to run the monitoring equipment that would document

and at Edwin Martham Elementary in Pasco. The stations monitor weather, take a continuous reading of radiation dose and sample for plutonium, uranium, tritium and radioactive iodine. Local teachers collect the data.

"People trust teachers," Schreckhise said. The program has been particularly well received in Pasco and Richland, he added.

The concept was picked up by the Department of Energy officials at the Nevada Test Site and a series of radiation monitoring stations were established, manned by residents of downwind communities.

Now, the idea has come to Hanford. DOE has established three community monitoring stations at Leslie Grove Park in Richland, Basins City Elementary School

Richland schools and Wagner's back-up, is paid \$62 a month. Data collected at the community stations are used — along with data from 53 similar stations operated by Battelle — to produce Hanford's annual environmental report.

Pay to the teachers is modest. For example, Chuck Wagner, a teacher who does most of the work at the Leslie Grove station, collects \$250 a month. Tom Gilmore, science coordinator for

to teach the public something about radiation monitoring through a self-guided tour. Signs explain the purpose of various instruments.

And passers-by frequently stop to question Gilmore and Wagner when they are at the station, offering an opportunity for an impromptu lesson.

teaching curricula. It's a good counter to television where every problem is solved within 30 minutes, said Gilmore. Kids learn that it can take months or years of data collection before a meaningful pattern is revealed, he added.

"The answers to a lot of scientific questions aren't known. That's important to learn. That's what the station is for," Gilmore said.

The stations also are designed to teach the public something about radiation monitoring through a self-guided tour. Signs explain the purpose of various instruments.

And passers-by frequently stop to question Gilmore and Wagner when they are at the station, offering an opportunity for an impromptu lesson.

Metro Northwest

Date: 13 Nov 91 / NOV 19 1991
To: Note
From: R. GENE SCHRECKHISE
RECEIVED
WATER RESOURCES CENTER

at tried to give DOE and
DRI and EPA credit;
However, the reporter only
heard DOE apparently. That's
part of our job — doing the
work so DOE can get the
credit + we the blame!
Gene

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EG&G ROCKY FLATS, INC.

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February 9, 1992

GHS-0015-92

**Mr. Robert Taft
3220 El Camino Road
Las Vegas, Nevada 89102**

Dear Mr. Taft:

Bonnie Pauley and I would like to thank you on behalf of the Environmental Management Department for participating in the community Radiation Monitoring (ComRad) Program training session on February 6, 1992. Your professionalism, organization, and cooperation made the training session a success.

The station and alternate station managers filled out a questionnaire evaluating the training topic and the speaker. The responses from this evaluation reflected that the February 6, 1992, training session was conducted in a professional, informative, and courteous manner. Several comments were made stating that you were an excellent, interesting, effective, and informative speaker.

Due to the attendees busy schedule, it was necessary to conduct the training session on a week night. We appreciate your personal time to come and speak to our station and alternate station managers. It has been a pleasure working with you and both Bonnie and I look forward to future interactions with you on this project.

**G.H. Setlock, Manager
Air Quality & Chemical Tracking Division
Environmental Management Department**

kjh

cc:
R.S. Almquist
J. E. Evered
D.R. Maxwell
B.J. Pauley

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LAS VEGAS

MAR 5 1992

RECEIVED
WATER RESOURCES CENTER

February 28, 1992

CR-013-92

Mr. Nate Cooper
Desert Research Institute
University and Community College
System of Nevada
Las Vegas, Nevada 89102

Dear Mr. Cooper:

Al Howard, Kim Howard, and I would like to thank you and Juana Blackburn for your hospitality, information, and assistance in the development of the Rocky Flats Plant (RFP) Community Radiation Monitoring (ComRad) Program. The time you spent with us and the information you provided for us added the dimension of experiencing an existing and workable system.

Rocky Flats Plant station managers and alternates have tentative plans in August 1992 to participate in a joint station manager training session in Brianhead, Utah. Since most of our station managers and alternates have not traveled in the Brianhead area, please send me information as it becomes available on accommodations, facilities, and restaurants for this area.

It has been a pleasure working with you and Juana Blackburn. Thank you again for your contribution and cooperation in the development of the RFP ComRad program. If I can provide assistance with the August training session, please let me know. My telephone number is (303) 273-6113, or you may contact Kim Howard at (303) 273-6112.

A handwritten signature in cursive script that reads 'B. J. Pauley'.

B. J. Pauley
Air Quality & Chemical Tracking Division
Environmental Management Department

kjh

Attachments:
As Stated

cc:
R. S. Almquist
J. E. Evered
E. A. Howard
D. R. Maxwell
G. H. Setlock

**Mr. Nate Cooper
Desert Research Institute
Water Resources Center
755 East Flamingo Road
Las Vegas, Nevada 89132-0040**

January 5, 1993

Dear Nate:

As promised here is a bit of information about what Kelly Bringhurst and I will be doing during the coming year. We have both been accepted for summer internships through the P.E.T.E. (Partnerships in Environmental and Technical Education) Initiative. Kelly will be working out at the Nevada Test Site and I will be working with EPA in Las Vegas. We feel very fortunate that both of us were accepted because we had our doubts that two people from the same school would be taken into the program within a given year. We are both very enthusiastic and excited about being able to participate in the partnerships program.

As you know, we are planning to start an Environmental Science/Hazardous Materials curriculum during Fall Quarter of 1993. We will be one of two schools in Utah offering this training program. When I attended the very first PETE conference in San Francisco a little over a year ago I could see that this was going to become a very viable program and so I brought Kelly in to help me get it started. Since then we have received about \$35,000 in grants to get started and get trained in this area. Dixie College is kicking in an additional \$12,000 over the next two quarters to pay Kelly and I for time in writing the program, obtaining books, preparing course outlines, and all the other things that need to be done to start a brand new program. We feel very good about the program and feel that within a year or so we will have department status. I have been made program director for the EHMT program and Kelly is my assistant. I have also been asked to serve on the PETE Steering Committee and I hope to be able to be in on some important decisions concerning the direction in which the PETE organization will move in the next 5 years. It is of interest to note that since the beginning of the PETE program in August of 1991 the original 5 state consortium has now gone nationwide. The total national effort was supposed to take 5 years so you can see that things have been moving quite rapidly! Between Kelly and I we will teach the Hazmat program in addition to handling our current teaching loads for at least one year. We may at that time go full time with the EHMT program. Kelly and I are also looking into the possibility of starting an environmental consulting firm sometime in 1993. We feel that the need is here and the time is right for such a move.

We would like to express our thanks for all the help we have had from the organizations in the Community Monitoring Network. It gives us a good feeling to go to conferences and meetings and see people like Nick Aquilina and Rudy Cruz and be able to talk to them as friends. We feel that we have had some real advantages in our attempts to get a EHMT program started by being associated with the Community Monitoring group.

We are looking forward to a great summer and perhaps we can get together and come over to DRI and see you during the summer. We are also looking forward to the Test Site visit during the winter training session.

Many thanks for all the help over the years.

**Jack Heppler/Kelly Bringhurst
Station #021 St. George, Utah.**

LAS VEGAS

MAR 17 1992

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February 27, 1992

Dear Mr. Jerry Martin,

The Tonopah Beta Sigma Phi Chapters
are extending our thank you to you for your
enlightening presentation on Electronic
Product Radiation.

Your presentation was quite informative
to our needs. Our awareness of our daily
exposure to electronic radiation has been
increased.

Thank you again Mr. Martin.

Cordially,

Mu Chapter
Xi Theta Chapter
Epsilon Chapter

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APR 15 1992

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Mr. Nate Cooper
Desert Research Institute
P.O. Box 19040
Las Vegas, NV 89132-0040

Dear Mr. Cooper:

On April 7, 1992, I gave a presentation at the Lincoln County High School to two science classes. A total of 40 students are in the science classes. I also spoke to a general assembly of the junior high school numbering approximately 80 students. The presentations appeared to be well received.

Sincerely,

A handwritten signature in cursive script, appearing to read "Kenneth Giles".

Kenneth Giles
Environmental Protection Assistant
Field Monitoring Branch

cc: Charles Costa, NRD
George Martin, NRO
Herbert Maunu, NRO
Paul Weeden, NRD

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