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COMMUNITY RADIATION MONITORING PROGRAM

ANNUAL REPORT

October 1, 1989 – September 30, 1990

by
**E. Nathan Cooper
Richard D. McArthur**

July 1991

Publication #45091

MASTER

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**COMMUNITY RADIATION MONITORING PROGRAM
ANNUAL REPORT**

October 1, 1989 – September 30, 1990

by

**E. Nathan Cooper
Richard D. McArthur**

**Water Resources Center
Desert Research Institute
University of Nevada System**

Publication #45091

prepared for

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

July 1991

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SECTION 1

INTRODUCTION

The tenth year of the Community Radiation Monitoring Program began in the summer of 1990, and the work continues as an integral component of the U.S. Environmental Protection Agency's (EPA) long-term offsite radiological monitoring program. The Community Radiation Monitoring Program is a cooperative effort involving the U.S. Department of Energy (DOE), the EPA, the University of Utah (U of U), and the Desert Research Institute (DRI) of the University of Nevada System.

The major objectives of this program are to perform radiological sampling and monitoring, to increase the understanding by the people who live in the areas surrounding the Nevada Test Site (NTS) of the activities for which DOE is responsible, and to disseminate the results of radiation monitoring activities. In the attempt to improve communications with those residents, involving people in these communities has been heavily stressed. Local people, active science teachers whenever possible, have been hired to manage monitoring stations at the 19 locations. These Managers, who have received extensive and continuing training, serve as program representatives in their communities. They have succeeded, through their training, experience, interest and effort, in becoming a very able and valuable resource in the positive communication endeavor.

Another goal that has been recognized is augmenting and enhancing the collection of airborne radiation data in order to better protect the health and safety of people who live in the offsite areas. The overriding consideration of all efforts in this program is the protection of that population from any radiation hazards that could occur as a result of weapons testing activities at the NTS.

Methods used to accomplish programmatic goals include hiring residents of the communities where monitoring stations are located as program representatives, presenting public education forums in those and other communities, disseminating information on radiation, testing and related subjects, and developing and maintaining contacts with local citizens and elected officials in the offsite areas.

The responsibilities of the entities involved, which have been 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, data collection and analysis, and management support; the University of Utah provides semi-annual technical training for Station Managers and Alternates; and DRI organizes the public awareness part of the program, hires and manages Station Managers and Alternates, arranges public and school education forums, interacts with people in the communities, disseminates information, and does limited data verification through independent sample collection and analysis.

SECTION 2

STATIONS AND STATION MANAGERS

GENERAL COMMENTS

Station Managers and Alternate Managers live in the 19 communities where Community Radiation Monitoring Stations have been established (see Figure 1). Wherever possible, these DRI employees are science teachers, generally at the high school level and actively involved in science-related education, who have been recommended by public officials and/or school administrators. They are responsible for helping to keep monitoring equipment functioning by inspecting the equipment, reporting problems and regularly changing charcoal gas and air particulate filters. They also post monitoring results, notices of nuclear tests and other relevant information in appropriate places to inform the public of DOE and EPA activities. Managers and Alternates are of most value in their role as local liaison between their fellow citizens, their students and the agencies involved in the program.

At the end of fiscal year 1990, Station Managers were in place at all stations, with only two changes having occurred during the year. One action involved reversing the roles of the Station Manager and Alternate in Alamo, Nevada, at their request and for the strengthening of the program. One new Alternate was hired, in Austin, Nevada. At year-end, two Alternate vacancies, at Las Vegas and St. George, were not filled. Table 1 lists Station Managers and Alternates as of September 30, 1990.

MANAGER TRAINING

The standard two training sessions for Managers and Alternates were convened by Dr. Gary Sandquist during this fiscal year. Agendas and attendance lists are presented in Appendix A.

The Winter Training Session was held at the Palace Station in Las Vegas on December 27-28, 1989. Twenty-four Managers and Alternates attended and heard presentations on six timely and relevant topics.

The Summer Training Session was held July 30-August 3, 1990, in Brian Head, Utah, for the third year in a row. In addition to the ambience of the location, it has proven to be an economically sound choice for the meeting place. Twenty-six Station Managers and Alternates attended this session. Dr. Sandquist put together a very comprehensive program with two days devoted to the basics of nuclear physics and radiation-related subjects and the balance of the five days covered by 13 speakers on many timely and program relevant subjects. One of the speakers, Vincent Covello from Columbia University, addressed "Risk Communication," and his ideas and suggestions will have a profound influence on the manner in which our program outreach (public meetings) will be conducted in the future. A number of high level officials from the DOE, the EPA, the U of U and the DRI added to the high-quality experience of the session.

Transcripts of the "Station Manager Reports," a regular event at all training sessions, are included in Appendix A.

MANAGER PERFORMANCE EVALUATION

Evaluating the performance of Station Managers and Alternates was continued over the year, through checking the written record of their visits to their stations and by personal discussions with people with whom they interact. Personal visits and telephone contacts also were accomplished periodically.

Almost without exception, our people are very conscientious about checking their stations, collecting the appropriate samples, reporting equipment problems, and following the EPA Standard Operating Procedures and the DRI job description. The rare exception has shown good improvement in performance when reminded of some oversights. We have

TABLE 1

**STATION MANAGERS AND ALTERNATES
COMMUNITY RADIATION MONITORING PROGRAM**

September 30, 1990

ALAMO

Clark M. "Rick" Hardy (Lorna)
P.O. Box 394
Alamo, NV 89001
(H) (702) 725-3442
(W) (702) 725-3321

(Alternate)

Dell Sullivan (Marva)
P.O. Box 182
Alamo, NV 89001
(H) (702) 725-3544

AUSTIN

William S. (Bill) Cox (Loretta)
P.O. Box 286
Austin, NV 89310
(H) (702) 964-2385
(W) (702) 964-2467

(Alternate)

Thomas J. Brannan (Gail)
P.O. Box 59
Austin, NV 89810
(H) (702) 964-2631
(W) (702) 964-2108

BEATTY

John C. Lisle (Gennie)
P.O. Box 357
Beatty, NV 89003
(H) (702) 553-2326
(W) (702) 553-2902

(Alternate)

Richard A. Johnson (Nancy)
P.O. Box 626
Beatty, NV 89003
(H) (702) 553-2216
(W) (702) 553-2912 (Motel)

CALIENTE

Judy A. Foremaster (Lin)
P.O. Box 465
Caliente, NV 89008
(H) (702) 726-3766
(W) (702) 726-3690

(Alternate)

Brent H. Perkins (Tonya)
438 Mac Arthur Drive
Caliente, NV 89008
(H) (702) 726-3381
(W) (702) 726-3772

CEDAR CITY

Melvin D. Baldwin (Connie)
177 North 1050 West
Cedar City, UT 84720
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(Alternate)

Glade V. Sorensen (Sherie)
421 Circle Way Drive
Cedar City, UT 84720
(H) (801) 586-8372
(W) (801) 586-2820

Continued **TABLE 1**

DELTA

Thomas S. Judd (Sharon)
850 North 500 W.
Delta, UT 84624
(H) (801) 864-2745
(W) (801) 864-2745

(Alternate)

Beverly Jean DeWyze (Jim)
P.O. Box 295
Delta, UT 84624
(H) (801) 864-2029
(W) (801) 864-3891

ELY (Co-Manager)

Floyd O. Ricketts (Lolla)
1490 Mill
Ely, NV 89301
(702) 289-6730

(Co-Manager)

Louis Papez (Eve)
P.O. Box 764
McGill, NV 89318
(702) 235-7556

GOLDFIELD

Myron A. Johnson (Bernice)
P.O. Box 166
Goldfield, NV 89013
(H) (702) 485-6360
(W) (702) 485-6355

(Alternate)

Christine D. Tatum (Tobie)
P.O. Box 558
Goldfield, NV 89013
(H) (702) 485-3224
(W) (702) 485-6337

INDIAN SPRINGS

James M. Hopkin (Lael)
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Indian Springs, NV 89018
(H) (702) 879-3232
(W) (702) 879-3201
(W) (No Charge) 382-8011

(Alternate)

Larry L. Hathhorn (Hazel)
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Indian Springs, NV 89018
(H) (702) 879-3823
(W) (702) 879-3201

LAS VEGAS

Hiram M. Hunt (Lois)
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Las Vegas, NV 89121
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MILFORD

Dale E. Jensen (Judy)
402 West 500 S., Box 25
Milford, UT 84751
(H) (801) 387-2656
(W) (801) 387-2751

(Alternate)

Morden Leon Gay (Carolee)
65 North 500 West
Milford, UT 84751
(H) (801) 387-2437
(W) (801) 387-2751

OVERTON

Nicklas J. Bowler (Bonnie)
P.O. Box 89
Logandale, NV 89021
(H) (702) 398-3596
(W) (702) 397-2611

Continued **TABLE 1**

(Alternate)

Jack W. Nelson (Gaye)
P.O. Box 232
Logandale, NV 89021
(H) (702) 398-3503
(W) (702) 397-2611

PAHRUMP

Albert J. Giannotti (Maryann)
P.O. Box 145
Pahrump, NV 89041
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(W) (702) 727-5546

(Alternate)

Larry G. Goins (Elaine)
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Pahrump, NV 89041
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(W) (702) 727-5546

RACHEL

Christy S. Castleton (Gary)
Star Route, Box 39
Alamo, NV 89001
(H) (702) 729-2674
(W) (702) 729-2555

(Alternate)

Ruth Agee (Jace)
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Alamo, NV 89001
(H) (702) 729-2620

SALT LAKE CITY

Gary M. Sandquist (Carol)
1738 Ramona Avenue
Salt Lake City, UT 84108
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ST. GEORGE

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365 North Donlee Drive
St. George, UT 84770
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(W) (801) 673-4811, ext 364
Secretary: Ext 339

SHOSHONE

Brian W. Brown (Bonnie)
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Shoshone, CA 92384
(H) (619) 852-4403
(W) (619) 852-4303, 4307

(Alternate)

Kenneth W. Smith (Gail)
P.O. Box 114
Shoshone, CA 92384
(H) (619) 852-4328
(W) (619) 852-4303

TONOPAH

Laurance (Larry) Woods (Pat)
P.O. Box 745
Tonopah, NV 89049
(H) (702) 482-3960
(W) (702) 482-3485

(Alternate)

Mark E. Howard (JoAnne)
P.O. Box 935
Tonopah, NV 89049
(H) (702) 482-3420
(W) (702) 482-6644

an excellent group of dedicated people, each a little different and with two or three real stars, but all evidence is that they are well accepted in their communities and are considered the local experts in matters pertaining to nuclear and radiation matters and DOE activities. They are a good group.

SECTION 3

PUBLIC INTERACTION

PUBLIC MEETINGS

The nine public meetings that were held during this fiscal year are listed at the end of Table 2. Total attendance for these meetings was 426 citizens, for an average of 47 per meeting. This average is higher (by 25) than the average for the preceding eight years that we have had such meetings.

Public Meetings FY 1990

Location: Pahrump, Nevada
Date: February 9, 1990 Attendance: 150
Facility: Pahrump Valley Senior Citizens Center
Previous Meetings: February 3, 1982 (16)*; January 23, 1986 (12)*
Presiding Local Dignitary: none
Comments: The 15-minute movie "Testing Nuclear Weapons" was shown, after which Bob Taft, Daryl Thome' and Max Powell fielded questions from the group. Several people indicated interest in a tour of the NTS. Since we were competing with the serving of lunch, there were breaks in audience attention, but the presentation was believed to be worthwhile.

Location: Pahrump, Nevada
Date: February 9, 1990 Attendance: 29
Facility: Pahrump Town Hall
Previous Meetings: February 3, 1982 (16)*; January 23, 1986 (12)*; February 9, 1990 (150)*
Presiding Local Dignitary: Marvin Veneman, Town Board Chairman
Comments: An inquisitive crowd included some people who were openly skeptical but who remained polite and restrained. The hour-long question and answer period was devoted largely to Yucca Mountain related topics. It was a good meeting.

Location: Bishop, California
Date: February 15, 1990 Attendance: 64
Facility: City Council Chambers
Previous Meeting: November 29, 1984 (62)*
Presiding Local Dignitary: Bishop Mayor Clyde Coons
Comments: Three of the five County Supervisors plus Mayor Coons attended along with two dozen members of the group called Sierra Nevada Alliance for Peace. Questions were primarily on the need for or the morality of nuclear testing. Older members of the audience were less contentious, and the question and answer portion and conversations afterward were spirited. The meeting was

* Attendance at previous meetings

considered successful. An interesting, but critical, letter was sent to Mr. Taft as a result of the meeting.

Location: Rachel, Nevada
Date: April 16, 1990 **Attendance:** 50
Facility: A'Le'Inn
Previous Meeting: April 15, 1982 (29);* May 14, 1986 (34)*
Presiding Local Dignitary: Edith Grover, Citizen
Comments: A very good meeting with friendly folks present was preceded by a community spaghetti dinner. This was the first attempt at a revised meeting format, and seemed to be well received. The few questions were mostly about Yucca Mountain

Location: Alamo, Nevada
Date: April 12, 1990 **Attendance:** 27
Facility: Pahrnagat Valley High School
Previous Meeting: June 30, 1982 (37);* January 21, 1986 (47)*
Presiding Local Dignitary: Verna Hansen, Town Board Chairwoman
Comments: Again a friendly crowd. The presentation was well received and the questions, answers and one-on-one follow-up after the meeting were most cordial, with little serious concern over DOE activities evidenced.

Location: Dolan Springs, Arizona
Date: May 24, 1990 **Attendance:** 41
Facility: Dolan Springs Community Hall
Previous Meeting: March 13, 1986 (35)*
Presiding Local Dignitary: Helen Plaunty, Community Council President
Comments: Some very serious concerns, based on rumors like "atmospheric testing fallout causes aneurysms," were brought out in this meeting. The audience seemed to appreciate our being there, and a discussion about the possibility of an NTS tour occurred. A worthwhile effort.

Location: Bunkerville, Nevada
Date: June 27, 1990 **Attendance:** 6
Facility: Bunkerville Community Center
Previous Meeting: September 19, 1985 (18)*
Presiding Local Dignitary: Loye Houston, Town Board Chairwoman
Comments: The attendance total seems to indicate very little interest in our presentation – perhaps not much concern here about radiation. Our arrangements and advertising were the same or better than most of the previous 92 meetings.

* Attendance at previous meetings

Location: Mesquite, Nevada
Date: June 28, 1990 **Attendance:** 3
Facility: Mesquite City Hall
Previous Meeting: January 19, 1984 (20)*
Presiding Local Dignitary: Jimmy Hughes, Mayor
Comments: The very low attendance is attributed to an emergency City Council meeting held next door to our meeting. The three who attended were interested and attentive, but the results were disappointing.

Service Club Meetings

Location: St. George, Utah
Date: September 26, 1990 **Attendance:** 56
Facility: Marie Callender Meeting Room
Previous Meetings: June 9, 1982 (14);* January 24, 1985 (64)*
Presiding Local Dignitary: Floyd Fox, Executive Vice President, St. George Chamber of Commerce
Comments: The subject of the presentation, chosen by the Chamber leadership, was "Fallout in St. George: Past and Present." The talk was given by David Wheeler (DOE/NV) with assistance from Jack Heppler, Community Monitoring Station Manager. The audience was mostly interested and appreciative, with some hostility evidenced. Overall, it was judged to be a worthwhile effort which resulted in an invitation to return and speak to the group again on some related subject.

* Attendance at previous meetings

Future Direction

Influenced largely by comment and advice from the Columbia University expert on risk communication, Dr. Vincent Covello, the traditional (for this program) town meeting concept is in the process of being revised. His suggestions were along the following lines:

1. Carefully identify target audiences.
2. Let those audiences choose the subjects in which they are interested.
3. Carefully prepare the presentations, keeping them short and succinct, emphatic and positive.
4. Give them hard copies of the message(s) after the presentation to carry home.

This is a very general overview of the Covello message, which was videotaped and edited to a 60-minute video that is available to anyone interested. His message got the attention of all who heard it, which has led to program personnel deciding to modify our outreach efforts. The advice received is being adapted to our situation, and our activities next year are being planned to reflect his suggestions. The first two steps in this process will be identifying our audiences and restructuring our presentations. Results of these efforts will be reported next year.

TABLE 2

**PUBLIC MEETINGS
COMMUNITY RADIATION MONITORING PROGRAM**

	<u>Location</u>	<u>Date of Meeting</u>	<u>Attendance</u>
FY 1982	1. Pahrump, Nevada	February 3, 1982	16
	2. Goldfield, Nevada	March 22, 1982	6
	3. Tonopah, Nevada	April 1, 1982	7
	4. Rachel, Nevada	April 15, 1982	29
	5. Overton, Nevada	May 27, 1982	18
	6. St. George, Utah	June 9, 1982	14
	7. Cedar City, Utah	June 18, 1982	8
	8. Alamo, Nevada	June 30, 1982	37
	9. Ely, Nevada	July 28, 1982	14
	10. <u>Beatty, Nevada</u>	<u>September 15, 1982</u>	<u>20</u>
FY 1983	11. Austin, Nevada	October 13, 1982	4
	12. Indian Springs, Nevada	October 28, 1982	7
	13. Shoshone, California	November 28, 1982	40
	14. Panaca, Nevada	March 8, 1983	16
	15. <u>Hurricane, Utah</u>	<u>March 31, 1983</u>	<u>13</u>
	16. Boulder City, Nevada	November 17, 1983	17
	17. Mesquite, Nevada	January 12, 1984	20
FY 1984	18. Eureka, Nevada	February 14, 1984	3
	19. Searchlight, Nevada	March 22, 1984	11
	20. Bullhead City, Arizona	April 19, 1984	16
	21. Currant, Nevada	May 16, 1984	23
	22. Enterprise, Utah	June 13, 1984	14
	23. Milford, Utah	June 14, 1984	17
	24. Amargosa Valley, Nevada	July 18, 1984	32
	25. Kanab, Utah	August 22, 1984	7
	26. <u>Fredonia, Arizona</u>	<u>August 23, 1984</u>	<u>15</u>
	27. Kingman, Arizona	October 17, 1984	20
FY 1985	28. Silver Peak, Nevada	November 28, 1984	14
	29. Bishop, California	November 29, 1984	62
	30. Cedar City, Utah	January 23, 1985	30
	31. St. George, Utah	January 24, 1985	64
	32. Henderson, Nevada	March 13, 1985	14
	33. Beaver, Utah	April 17, 1985	5
	34. Parowan, Utah	April 18, 1985	20
	35. Caliente, Nevada	May 22, 1985	23
	36. Pioche, Nevada	May 23, 1985	9
	37. LaVerkin, Utah	July 9, 1985	10
FY 1986	38. Washington, Utah	July 10, 1985	11
	39. <u>Bunkerville, Nevada</u>	<u>September 19, 1985</u>	<u>18</u>
	40. Tecopa Hot Springs, California	October 28, 1985	44
	41. North Las Vegas, Nevada	December 12, 1985	11
	42. Alamo, Nevada	January 21, 1986	47
	43. Pahrump, Nevada	January 23, 1986	12
	44. Dolan Springs, Arizona	March 13, 1986	35
	45. Rachel, Nevada	May 14, 1986	34
	46. Panguitch, Utah	June 11, 1986	18

CONT. TABLE 2

FY 1986 (Cont'd.)	47. Orderville, Utah	June 12, 1986	7
	48. Ely, Nevada	July 16, 1986	40
	49. Lund, Nevada	July 17, 1986	18
	50. Tonopah, Nevada	September 17, 1986	35
	51. <u>Beatty, Nevada</u>	<u>September 18, 1986</u>	<u>33</u>
FY 1987	52. Indian Springs, Nevada	October 21, 1986	17
	53. Mt. Charleston, Nevada	October 23, 1986	10
	54. Veyo, Utah	November 19, 1986	20
	55. Santa Clara, Utah	November 20, 1986	22
	56. Brideport, California	March 18, 1987	25
	57. Hawthorne, Nevada	March 19, 1987	33
	58. Leeds, Utah	April 22, 1987	48
	59. Minersville, Utah	April 23, 1987	18
	60. Austin, Nevada	May 13, 1987	8
	61. Round Mountain, Nevada	May 14, 1987	106
	62. Goldfield, Nevada	September 16, 1987	15
	63. <u>Logandale, Nevada</u>	<u>September 16, 1987</u>	<u>22</u>
	64. Ivins, Utah	November 18, 1987	16
	65. Bloomington, Utah	November 19, 1987	11
	66. Enterprise, Utah	February 16, 1988	17
FY 1988	67. Milford, Utah	February 17, 1988	8
	68. Lee Vining, California	March 22, 1988	26
	69. Furnace Creek, California	March 23, 1988	35
	70. Delta, Utah	May 18, 1988	11
	71. Beaver Dam, Arizona	May 19, 1988	4
	72. Tropic, Utah	June 22, 1988	12
	73. Escalante, Utah	June 23, 1988	7
	74. Gabbs, Nevada	September 21, 1988	83
	75. <u>Fish Lake Valley/Dyer, Nevada</u>	<u>September 22, 1988</u>	<u>25</u>
	76. Laughlin, Nevada	November 15, 1988	23
	77. Needles, California	November 16, 1988	9
	78. Toquerville, Utah	February 15, 1989	18
	79. Springdale, Utah	February 16, 1989	30
	80. Kanarrville, Utah	April 11, 1989	16
FY 1989	81. Kanab, Utah	April 12, 1989	10
	82. Amargosa Valley, Nevada	May 19, 1989	38
	83. Virgin, Utah	July 19, 1989	9
	84. Leeds, Utah	July 20, 1989	6
	85. Pioche, Nevada	September 20, 1989	11
	86. <u>Caliente, Nevada</u>	<u>September 21, 1989</u>	<u>80</u>
	87. Pahrump, Nevada	February 9, 1990	150
	88. Pahrump, Nevada	February 9, 1990	29
	89. Bishop, California	February 15, 1990	64
	90. Rachel, Nevada	April 16, 1990	50
	91. Alamo, Nevada	April 17, 1990	27
	92. Dolan Springs, Arizona	May 24, 1990	41
	93. Bunkerville, Nevada	June 27, 1990	6
	94. Mesquite, Nevada	June 28, 1990	3
FY 1990	95. St. George, Utah	September 26, 1990	56

SITE VISITS

DRI staff have made at least four visits to all of the communities that have monitoring stations, plus most of the other towns in the offsite area. We had no occasion to travel to Salt Lake City. The visits are generally accomplished as a part of the data verification effort, and are used to renew contacts with local citizens and elected officials, contact Station Managers and Alternates in person, and check conditions at the stations. Another activity accomplished on these trips is the preliminary data gathering for public meetings to be held in the future. The contacts that have been established over the years of the program's existence make it easier to pick up on problems or opportunities in the communities that can be addressed as part of our program objectives.

COMMUNICATION

Contacts with the public on the part of DRI staff have been discussed in the preceding sections of this report. We do maintain relatively close contacts with our Station Managers and Alternates through telephone and written channels and this has continued through the period. Notification of all announced tests and any other significant events is given to these representatives, who in turn pass it along in their communities through posting on bulletin boards and word-of-mouth. Problems or questions that arise in the communities are reported back to program officials, and appropriate action is taken.

SECTION 4

COMPARISON OF TLD RESULTS

To help verify the data collected at the monitoring stations, DRI installs thermoluminescent dosimeters (TLDs) at six stations every quarter. The measurements obtained by the DRI dosimeters are then compared with those obtained by the EPA's dosimeters at the same station over the same time period. Since the third quarter of FY 1989, the DRI dosimeters have been obtained from and analyzed by Reynolds Electrical and Engineering Company (REECo).

The results of this program in FY 1990 are shown in Table 3. To facilitate comparison between time periods of different lengths, the data are reported as exposure rates in mR/day. In all but two cases, the DRI (REECo) results are higher than the EPA results. A similar tendency was observed in the results from the third and fourth quarters of FY 1989. One difference between the EPA and REECo data is that the EPA data represent net exposure (corrected for background, TLD reader, and relative dosimeter sensitivity) while the REECo data represent gross dosimeter response (not corrected for background, TLD reader, or relative dosimeter sensitivity).

Because of the different measurement periods and different analysis methods, comparison of the EPA and DRI results is not meaningful. In the coming year, additional effort will be devoted to better coordinating the placing and collecting of the DRI and EPA dosimeters. In addition, an attempt will be made to ensure that the DRI dosimeters (to be obtained from and analyzed at Arizona State University in FY 1991) are analyzed in the same manner as those from the EPA.

According to the EPA, both TLD systems indicate that there were no exposures due to NTS activities and that radiation levels measured at all locations were within the range of natural background.

TABLE 3. GAMMA EXPOSURE RATES MEASURED BY EPA AND DRI.						
Town	EPA			DRI		
	Start	End	mR/d	Start	End	mR/d
Las Vegas	10/02/89	01/02/90	.060	10/06/89	01/08/90	.20
Beatty	10/04/89	01/04/90	.23	10/03/89	01/03/90	.36
Caliente	11/01/89	02/05/90	.19	10/04/89	01/04/90	.36
Rachel	11/01/89	02/08/90	.20	10/04/89	01/04/90	.42
Tonopah	11/08/89	02/14/90	.23	10/04/89	01/04/90	.37
Goldfield	11/09/89	02/14/90	.20	10/03/89	01/03/90	.31
Las Vegas	01/02/90	03/30/90	.016	01/02/90	03/30/90	.35
Beatty	01/04/90	04/04/90	.27	01/02/90	03/30/90	.21
Indian Springs	02/05/90	05/01/90	.069	01/02/90	03/30/90	.25
Rachel	02/07/90	05/02/90	.27	01/02/90	03/30/90	.33
Overton	02/08/90	05/02/90	.45	01/02/90	03/30/90	.31
Tonopah	02/14/90	05/10/90	.28	01/02/90	03/30/90	.32
Austin	02/15/90	05/08/90	.32	03/30/90	07/10/90	.47
Cedar City	02/26/90	05/31/90	.11	03/30/90	07/10/90	.25
Amargosa Valley	03/28/90	07/11/90	.24	03/30/90	07/10/90	.30
Las Vegas	03/30/90	06/28/90	.020	03/30/90	07/10/90	.19
Indian Springs	05/01/90	08/06/90	.089	03/30/90	07/10/90	.21
Tonopah	08/16/90	11/07/90	.25	07/10/90	10/14/90	.46
Milford	05/29/90	09/04/90	.30	07/11/90	10/17/90	.49
Beatty	07/10/90	10/10/90	.33	07/10/90	10/13/90	.42
Alamo	08/07/90	10/30/90	.25	07/11/90	10/17/90	.35
Caliente	08/08/90	10/29/90	.26	07/10/90	10/17/90	.37
Rachel	08/08/90	10/31/90	.30	07/11/90	10/17/90	.43

SECTION 5

SUMMARY

The events of FY 1990 indicate that another successful year in the evolution of the Community Radiation Monitoring Program is in the books. The agencies and organizations involved in the program have developed a sound and viable working relationship, and it appears that the major objectives, primarily dispelling some of the concerns over weapons testing and radiation on the part of the public, are being effectively addressed.

The program is certainly a dynamic operation, growing and changing to meet perceived needs and goals as more experience is gained through our work. The change in focus on our public outreach efforts will lead us to contacts with more students and schools, service clubs and special interest groups in the future, and will refine, and hopefully improve, our communication with the public. If that can be accomplished, plus perhaps influencing a few more students to stay in school and even grow up to be scientists, engineers and better citizens, we will be closer to having achieved our goals.

It is important to note that the success of this program has occurred only because the people involved, from the Department of Energy, the Environmental Protection Agency, the Desert Research Institute, the University of Utah and the Station Managers and Alternates work well and hard together. Our "extended family" is doing a good job.

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APPENDIX A

Station Manager Training Sessions

AGENDA

**COMMUNITY RADIATION MONITORING PROGRAM
DECEMBER 1989 TRAINING SESSION
PALACE STATION HOTEL, LAS VEGAS, NEVADA**

Wednesday		
27 December 1989	Activity	Sponsor
8:15 a.m.	Comments by DOE/NV Operations Manager	N. Aquilina – DOE/MGR
9:15 a.m.	Background on NEST	G. Sandquist – U of U
9:45 a.m.	Emergency Response – DOE	M. O'Connell – DOE
11:00 a.m.	Emergency Response EG&G	J. Doyle – EG&G
1:30 p.m.	Galileo Mission	Z. Burson – EG&G
2:45 p.m.	EPA	D. Thome' – EPA
4:00 p.m.	Terrorism – 'Buying the Bomb"	EPA
6:30 p.m.	Dinner – Nick's Supper Club	DRI
 Thursday		
28 December 1989	Activity	Sponsor
8:00 a.m.	Seeps, Vents & Purges	DOE, EPA
9:15 A.M.	Cold Fusion Update	G. Sandquist – U of U
10:30 a.m.	Station Manager Reports	Managers and Alternates
1:30 p.m.	Roundtable	All Participate

**ATTENDANCE
WINTER TRAINING SESSION**

**December 27–28, 1989
Palace Station Hotel
Las Vegas, Nevada**

Station Managers

Dell Sullivan
Clark Hardy
Ken Garey
Bill Cox
John Lisle
Rick Johnson
Judy Foremaster
Mel Baldwin
Glade Sorensen
Beverley DeWyze
Floyd Ricketts
Louie Papez
Myron Johnson
Jim Hopkin
Larry Hathhorn
Hiram Hunt
Dale Jensen
Leon Gay
Nick Bowler
Jack Nelson
Al Giannotti
Larry Goins
Christy Castleton
Ruth Agee
Brian Brown
Ken Smith
Larry Woods
Mark Howard

Station Location

Alamo, Nevada
Alamo (Alternate)
Amargosa Valley, Nevada
Austin, Nevada
Beatty, Nevada
Beatty (Alternate)
Caliente, Nevada
Cedar City, Utah
Cedar City, (Alternate)
Delta, (Alternate)
Ely, Nevada (Co–Manager)
Ely, (Co–Manager)
Goldfield, Nevada
Indian Springs, Nevada
Indian Springs (Alternate)
Las Vegas, Nevada
Milford, Utah
Milford (Alternate)
Overton, Nevada
Overton (Alternate)
Pahrump, Nevada
Pahrump (Alternate)
Rachel, Nevada
Rachel (Alternate)
Shoshone, California
Shoshone (Alternate)
Tonopah, Nevada
Tonopah (Alternate)

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COMMUNITY RADIATION MONITORING TRAINING SESSION STATION MANAGERS REPORTS

December 28, 1989

Palace Station, Las Vegas, Nevada

The 1989 Winter Station Managers Training session sponsored by the Community Radiation Monitoring Program was held at the Palace Station in Las Vegas, Nevada, December 27 and 28, 1989. Dr. Gary Sandquist presided over the session.

Dr. Sandquist indicated some of the items for the Station Managers to respond to while giving their report. e.g., indicate if there were high values or normalcies or problems associated with some of the tests. Also, Daryl Thome likes to keep track of equipment performance for EPA. An important aspect for the station is public interaction: if you have had any unique experiences at your station please indicate in your report.

Gary M. Sandquist, Manager, Salt Lake City, UT: The station has been running since it was installed in 1981. There has not been any high radiation levels. Equipment performance has been quite good, but we have had some problems with the noble gas monitor. In regard to public interaction, I would say that since Utah is no longer being considered as a repository for high level nuclear waste, that question has almost gone away. However, it is important for the public to know that there is a community monitoring radiation station in our area so try to do as much as you can so that the public is aware of what it is and what it's capabilities are.

David Burr, Alternate, St. George, UT: It has been a quiet year and we are still maintaining at the level of about 9 microns. There has been some equipment down time and also the noble gas problem, but all is working well most of the time. It has been a quiet year in regard to public interaction.

Brian Brown, Station Manager, Shoshone, CA: The radiation levels are normal at 10 to 12 micrograms per hour. Equipment performance has been good. In regard to public interaction, last fall I received a call from the Health Department spokesman from San Bernadino County, wanting some information about the radiation monitoring station. I spent some time showing him about the station, and he was very interested in the PIC and bulletin board where the information is accessible to the public.

Ken Smith, Alternate, Shoshone, CA: Everything seems to be working fine and haven't had any interaction.

Jim Hopkin, Station Manager, Indian Springs, NV: The measurements have been very consistent between 8 and 9 micro, and the equipment has worked well. The noble gas sampler had to be changed out a couple of times this past year. There have been more public inquiries in the past few months than in previous years.

Larry Hathhorn, Alternate, Indian Springs, NV: The Department of Energy brought up two buses for a tour of the Test Site. We had been working on this for a year, and it was a very successful trip. We appreciate the good cooperation we received from DOE.

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Mel Baldwin, Station Manager, Cedar City, UT: The radiation level remains quite constant. There was a problem with the noble gas and recently had to have the PIC replaced. Haven't had much public interaction, at least no more than usual, however, a few people do drop by and inquire about the station.

Dell Sullivan, Station Manager, Alamo, NV: There hasn't been any problems, and most everyone in the valley knows of the monitoring station. The equipment is working well.

Ruth Agee, Alternate, Rachel, NV: Everything seems to be working fine with the equipment. The only public interaction we seem to get is with the people concerning UFO's.

Larry Wood, Station Manager, Tonopah, NV: The radiation level is normal, and the equipment is running great. I would like to thank the Department of Energy for sending out a letter about a Test Site tour. The EPA does a great job on maintaining the station and I want to thank the route men for their support work.

Mark Howard, Alternate, Tonopah, NV: All seems to be going well with the station.

Nick Bowler, Station Manager, Overton, NV: The radiation levels have been normal. Our equipment has been working quite well, however, though we have had some noble gas problems the last two weeks. Jack Nelson, my assistant, attends to the station the first week of the month and I see to it for the other 3 weeks and it seems to be working well. There hasn't been much public interaction.

Bill Cox, Station Manager, Austin, NV: The radiation levels have been normal. The equipment has been working fairly well. There is a low community interest, however there was some question in regard to cancer deaths. The deaths were mostly alcohol and tobacco related.

Al Giannotti, Station Manager, Pahrump, NV: The radiation levels are normal. The equipment performs well. The only interaction I get is with the people at the police station, who check to see what the weather is going to be.

Tom Judd, Station Manager, Delta, UT: The station just picks up background radiation levels, there has been no deviation from that. The equipment performs well. There hasn't been much public interaction. I am working on getting some of the high school physics classes to come and take a tour of the station.

Beverly DeWyze, Alternate, Delta, UT: Expressed thanks for receiving the set of books "Harnessing the Atom" which were given to the 6th grade teachers, who said their science books were really inadequate and they were very appreciative to receive it.

Myron Johnson, Station Manager, Goldfield, NV: The radiation levels are consistently the same. We see quite a bit of change on the highs and lows and about 14 to 16 micro per hour. The equipment is running well, though we have had problems with the noble gas sampler. I had an unusual circumstance regarding the Barnwell test. I received a call wanting to know what was going on, and as I had just returned from reading the charts, so I was able to state that there was nothing in the area. I did call Herb to make sure that we didn't have a release,

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and he contacted Bob Lucas and he had me make contact with the DOE news person. There continues to be a marked interest with the educators, so when possible I try to get them over to visit the station.

Dale Jensen, Station Manager, Milford, UT: The radiation level has been consistent, at about 16 microgram an hour, and this hasn't changed much over the time the station has been in operation the past year and a half. I am having some problems with the tape. The paper tape for some reason wants to wind up on the wrong spool, maybe some of you have had a similar experience. I am not doing anything different, but it seems to want to roll up on the inside spool and messes the tape up for that week. Most of the interaction is from my students in school. We are continually discussing some of the current problems with energy and as it relates to nuclear energy. I am thankful for the workshops that I have been able to attend during the summer and for the instruction received to make me more informed about some of the current issues. It has been a real value to me as a teacher. The other day an older gentleman in the community had read news releases on happenings at the Test Site and he was quite concerned and he had some fears, so we had a good discussion. Our station is going real well and we are pleased to be in the program.

Leon Gay, Alternate, Milford, UT: I had a good discussion with a person that works for the railroad and he had thought it was a weather station and was most interested in finding out the purpose of the station.

Ken Garey, Amargosa, NV: The station operates good, we have one of the new PICs that uses a digital readout. I get a lot of interface with the citizens because the station is located right on a walkway between the school and the library. The students go by it almost daily and we also get a number of tourists that come to the Community Center. There seems to be much interest, especially when I point to Yucca Mt., which is directly behind the site. There is a new principal and 7th grade teacher who teaches an extensive sciences curriculum. I passed on the "Harnessing the Atom" pamphlet to the science instructor and he is using it in his Jr. High classes. He really appreciated getting it as he didn't have a good grasp on the physics. The maintenance on the station is excellent, haven't had a bit of trouble.

John Lisle, Station Manager, Beatty, NV: The radiation level has been clicking right along with no changes. The equipment performance has been good. The air sampler went out and the noble gas, but all is operational now.

Floyd Ricketts, Co-Manager, Ely, NV: The radiation level doesn't vary too much. On occasion while at the station there will be people stop by and inquire about the station operation.

Hiram Hunt, Station Manager, Las Vegas, NV: Have had some trouble with the equipment, but it is the oldest of these series of stations. Expressed thanks to Lois Hunt for her assistance with the station, however, there is need for an Alternate.

Judy Foremaster, Station Manager, Caliente, NV: There hasn't been anything unusual with the equipment. We had a Town Hall meeting in November in Caliente, and I think that it

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went quite well. I was pleased with the good attendance. Judy expressed appreciation for the support from EPA.

Brent Perkins, Alternate, Caliente, NV: Have had some public interaction while working at the station, and have given reassurance where concern was stated.

Jack Nelson, Alternate, Overton, NV: All is going well, as was previously reported by Nick Bowler.

COMMUNITY RADIATION MONITORING PROGRAM

STATION MANAGERS TRAINING SESSION

30 Jul - 3 Aug 1990: Brian Head Royale, (801) 677-2800/(800) 288-8824, BRIAN HEAD, UTAH

<u>Monday, 30 July</u>	<u>Activity</u>	<u>Sponsor</u>
7:30 AM	Continental Breakfast	DRI
8:00 AM	Welcome and Update: Session Overview	G. Sandquist-U of U
8:15 AM	Current Events at DOE	B. Church-DOE
8:45 AM	New DOE Town Meeting Presentation	J. Burrows-DOE
9:00 AM	Programmatic Changes in Community Monitoring Program	N. Cooper-DRI
9:15 AM	Station Manager's Reports	Station Managers
10:30 AM	Break	
10:45 AM	Round Table Discussion	All Participate
12:00 AM	Lunch	
1:30 PM	Basic Atomic and Nuclear Physics	G. Sandquist-U of U
2:30 PM	Break	
2:45 PM	Radiation Types and Interaction with Matter	K. Crawford-U of U
3:45 PM	Break	
4:00 PM	BIER V	G. Sandquist-U of U
5:00 PM	Session Ends	
<u>Tuesday, 31 July</u>	<u>Activity</u>	<u>Sponsor</u>
7:45 AM	Continental Breakfast	DRI
8:15 AM	Radiological Emergency Management	G. Sandquist-U of U
9:30 AM	Break	
9:45 AM	Transportation Accidents	K. Crawford-U of U
10:45 AM	Break	
11:00 AM	Nuclear Reactor Accidents	K. Crawford-U of U
12:00 AM	Lunch	
1:30 AM	Nuclear Attack	G. Sandquist-U of U
2:30 PM	Break	
2:45 PM	Examination & Review of Radiological Emergencies	K. Crawford-U of U
3:45 PM	Break	
4:00 PM	Working Conditions at DOE Sites (US Senate Hearings)	G. Sandquist-U of U
5:00 PM	Session Ends	
<u>Wednesday, 1 Aug</u>	<u>Activity</u>	<u>Sponsor</u>
7:45 AM	Continental Breakfast	DRI
8:15 AM	British Studies of Radiation Related Health Effects	G. Sandquist-U of U
9:30 AM	Break	
9:45 AM	U.S. Nuclear Tests Outside the NTS	D. Thome'-EPA
10:45 AM	Break	
11:00 AM	Cancer Mortality in Environs of Nuclear Facilities (NIH)	G. Sandquist-U of U
12:00 AM	Lunch	
1:30 PM	Station Operation Practice Session	U of U, EPA
3:30 PM	Station Update, Noble Gas Monitoring System	D. Thome'-EPA
4:30 PM	Award Ceremony	N. Aquilina-DOE
5:00 PM	Session Ends	
6:00 PM	Hosted Picnic at Duck Creek Campground (If inclement weather - Lions Pavilion in Parowan)	DRI

<u>Thursday, 2 Aug</u>	<u>Activity</u>	<u>Sponsor</u>
7:45 AM	Continental Breakfast	DRI
8:15 AM	Risk Communication	V. Covello-Columbia U
9:45 AM	Break	
10:00 AM	Introduction to Offsite Radiation Evaluation Review Program (ORERP)	
	Participants include the following speakers & organizations	
	David Wheeler, Bruce Church, Nick Aquilina	DOE
	Lynn Anspaugh	LLNL
	Ward Whicker	CSU
12:00 AM	Lunch	EML
1:30 PM	Resume session	Columbia U
	Arnold Covello	DRI
	Carol Thompson	U of U
	Walt Stevens, Lynn Lyon	All Participate
5:00 PM	Open Discussion of ORERP	
5:30 PM	Session Ends	
 <u>Friday, 3 Aug</u>	 <u>Activity</u>	 <u>Sponsor</u>
7:45 AM	Continental Breakfast	DRI
8:30 AM	Thyroid and Leukemia Studies	L.Lyon-U of U
9:30 AM	Break	
9:45 AM	Dose assessment and epidemiology	W. Stevens-U of U
10:45 AM	Break	
11:00 AM	Discussion	All participate
12:00 AM	Lunch	DRI
1:30 PM	Potential Health Effects of Electromagnetic Radiation	G. Sandquist-U of U
2:30 PM	Break	
2:45 PM	Update on Cold Fusion	G. Sandquist-U of U
3:45 PM	Break	
4:00 PM	Summary of Training Session	G. Sandquist-U of U
	Evaluation of Session	N. Cooper-DRI
	Administrative Details	N. Cooper-DRI
5:00 PM	Farewell and Dismissal	G. Sandquist-U of U

NOTES

APPENDIX A

ATTENDANCE SUMMER TRAINING SESSION

July 30 – August 3, 1990

Brian Head Royale Hotel

Brian Head, Utah

Station Managers

Dell Sullivan
Clark Hardy
Ken Garey
Bill Cox
John Lisle
Rick Johnson
Brent Perkins
Mel Baldwin
Glade Sorensen
Tom Judd
Myron Johnson
Jim Hopkin
Larry Hathhorn
Hiram Hunt
Dale Jensen
Nick Bowler
Jack Nelson
Al Giannotti
Christy Castleton
Ruth Agee
Jack Heppler
Brian Brown
Ken Smith
Larry Woods
Mark Howard

Station Location

Alamo, Nevada
Alamo (Alternate)
Amargosa Valley, Nevada
Austin, Nevada
Beatty, Nevada
Beatty (Alternate)
Caliente, Nevada (Alternate)
Cedar City, Utah
Cedar City, (Alternate)
Delta, Utah
Goldfield, Nevada
Indian Springs, Nevada
Indian Springs (Alternate)
Las Vegas, Nevada
Milford, Utah
Overton, Nevada
Overton (Alternate)
Pahrump, Nevada
Rachel, Nevada
Rachel (Alternate)
St. George, Utah
Shoshone, California
Shoshone (Alternate)
Tonopah, Nevada
Tonopah (Alternate)

**COMMUNITY RADIATION MONITORING TRAINING SESSION
July 30 – August 3, 1990
Brian Head, Utah**

The 1990 Summer Station Managers Training Session, a function of the Community Radiation Monitoring Program, was held in the Brian Head Royale Inn and Convention Center during the week of July 30 through August 3, 1990. Dr. Gary Sandquist presided throughout the program.

Opening Comments

Dr. Sandquist extended a welcome and gave an overview of the week-long schedule and events (agenda attached).

Bruce Church, Assistant Manager for Environment, Safety & Health, U.S. Department of Energy, Nevada Operations Office. Mr. Church referred to 1990 as being the "Year of the Tiger." He described some of his participation and involvements in heading the "Tiger Team" and of his work in Australia. Mr. Church commended the Community Radiation Monitoring personnel for the work they are doing in their communities.

JoAnne Burrows, Senior Health Physicist, Project Manager for the Community Radiation Monitoring Program, DOE/Nevada. Ms. Burrows explained the changes that are being made in the Town Hall meeting agenda. Mr. Aquilina wants a stronger DOE management presence at the meetings, so if he is not available another NV management level person will be there. The meetings are being shortened, and we are working at fine-tuning the presentation. We would appreciate any comments on this.

Daryl Thome', Acting Deputy Director, Nuclear Radiation Division, Environmental Monitoring Systems Laboratory, U.S. Environmental Protection Agency. Mr. Thome' introduced Milton Chilton, his replacement in EPA's Field Monitoring Branch, and other new EPA personnel.

Nate Cooper, Assistant Vice President for Planning and Development, Desert Research Institute. Nate discussed the tentative quarterly report form that had been sent out to the Station Managers and Alternates, with a format that can be helpful in the formulation of quarterly or annual reports. With this new form, hopefully, it will be easier for all concerned.

Nate addressed the topic of retirement and of the changes that have occurred in the program. A letter was put together in this regard, and this will be evaluated and decisions made on a community and individual basis.

Station Manager Reports

Dr. Sandquist recalled that for many years the Station Manager Report segment was scheduled near the conclusion of the training session. Two years ago we implemented the idea of having the Station Manager Reports early in the session, with the assumption that it might contribute to recognition and solution of current problems. The Station Manager and Alternate were both invited to come forward and give their report and to respond to the following subjects:

- Radiation data at your station
- Incidents that may occur at your station
- Public interaction – how do you interact
- Recommendations

Dell Sullivan, Station Manager and Rick Hardy, Alternate – Alamo, NV:

Dell

In Alamo we have a small but steady growth. We had a town meeting that I felt was quite effective, with good attendance. I feel that with the new format that we are making progress. I believe that this program was set up to inform people that the tests are being performed underground, and that there are no effects in the atmosphere. I do believe that purpose has been accomplished, especially with the students, and feel that there has been a positive change since the program was initiated. As the station is located at the corner of my lot so most days I check on it three or four times, and Rick comes by at least weekly or more often. The relationship with EPA has been great.

Rick

In response to JoAnne Burrows' inquiry of, "how many people did you interact with." When the students are in the older grades we talk about radiation when we come to those specific areas in chemistry and physics, and with the 7th and 8th grades I also arrange for a unit with them. I teach about 50 kids a year about radiation, and at least 50 or 60 have visited the station. Dell responded that his interaction was with about a dozen people each week.

Ken Garey, Amargosa Valley, NV:

Ken

The station has been in operation for about two years. We don't have the historic background radiation data to draw on as the rest of the stations have that have been in operation for ten years, but we are getting a data base now, and I have been informed that the data will start to be published soon. The equipment functions properly, and a new state-of-the-art PIC has been installed. There have been no incidents around the station. The station location is ideally suited; it is in a heavy traffic pattern just a quarter of a block from the school. The science teacher brings the class around every two weeks, with an average attendance of 15. There is a lot of interest from tourists that come through, and the fact is that most of the residents are in our third generation here. It really impresses them that the testing at the NTS has been going on this long and that the Federal Government does have a concern for the citizens of the United States. The comments are very favorable. (Ken also inquired if there was a handout available that would give results of the collected data). As I serve on the Volunteer Fire Department, at least twice a year I take my instruments to the meetings and show them that we have them on hand. It gives them a lot of confidence to know that in the event of an incident

on the highway that the equipment is on hand and in working order. Public interaction would probably be close to 200 a year.

Daryl Thome' responded that EPA has an annual report and would make it available for handout.

Bill Cox, Station Manager – Austin, NV:

Bill

The radiation data reads out at about 19 and staying there throughout the summer. The equipment operation has been good; however, a couple of weeks ago the tanks on the noble gas sampler got up to around 400 lbs. pressure and I called Herb on it. With regard to public interaction, there are students that have come to the station, as well as some local residents, so all together there has been interaction with about 50 people. A recommendation I have is that the cards that we fill out on Monday be made with a carbon or a triplicate form, so we can keep a copy.

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

John

The radiation data hasn't changed. Equipment has basically been running well; however, the air sampler was operating good then it quit and the refrigerator also quit, and it was replaced with a new one, which worked great until summer and the really high temperatures. It was determined that the air pump produces too much heat for the refrigerator so they changed the air pump and the problem was solved. Most of the public interaction I have had has been with people from Needles, California, which is not related to the Test Site. The State of California is putting in a low-level waste site in Needles and in the past years groups have come up from Needles, and I have attended about three of the meetings. I have talked to most of their City Council members, three high-school teachers and many others. Most of those that came here were against it, but by the time they had talked to the residents of Beatty, most have changed their minds. I attended the final hearing recently of California EPA and BLM. I was asked to participate in the meetings, because I was a Station Manager and much interest was generated. Local interaction has been minimal.

Rick

Rick indicated that he has taken both the Scouts and Cub Scouts down to the station because of his involvement with them, and hopefully they share it with their parents. Including students and those from Needles about 115 have visited the station. It was recommended that the station be relocated to a more visible area, and two places for consideration of relocating would possibly be the medical clinic or the library, which would be high traffic areas. John also suggested that it might be very beneficial to do a Town Meeting in Needles, California, as the people there seem to have some great concerns.

Daryl Thome' Indicated that he would meet with Nate Cooper in making contact with Needles and discuss doing something there.

Brent Perkins, Alternate Station Manager – Caliente, NV:

Brent

I have been involved with the program for a couple of years, however, this is the first time I have been able to attend the training session as it had conflicted with summer classes that I have been working on. I generally read the monitor one week each month

as the Alternate. There haven't been many changes in the program since my involvement; people are either indifferent or mildly interested. I would appreciate having a hand-out at the station to answer inquiries about the station. The location of the station is right next to City Hall, the Police Station and the Library so there is a constant flow of people walking by and inquiring about its operation. There are from 75 to 100 people a day that pass by the station.

Gary Sandquist Stated that he felt that it made good sense to locate the stations in areas of high traffic. There is a major parking lot behind the Engineering Building at the University of Utah, where his station is located, and as a result there is probably a couple of thousand students that walk down that section from the parking lot to their classes yearly.

Melvin Baldwin, Station Manager and Glade Sorensen, Alternate - Cedar City, UT:

Mel

Mel stated that he was one of the original participants in the program, and really appreciates the people that he has worked closely with, EPA, DRI and DOE. They are a good group to work with, and it has been a great experience. The radiation data stays constant. The equipment operation has been good and we appreciate the excellent job EPA does in keeping the equipment operational. We had some problem with the PIC making a double line at times but that has been corrected. The noble gas equipment has given us the most trouble. The station is located at Cedar High School, so we have a lot of public interaction with many going by the station, as it is close to the auditorium where there is a lot of public use and we have many inquiries about the station. The Utah Summer Games were held there, so that attracted a lot of out-of-town people. There has been very little vandalism of the station. With the battery setting out for the PIC it could be picked up without any problem, and I was wondering if it could be secured more than it is. I also feel that the citizens in our area feel comfortable about the radiation issue, and don't show any concern. The visibility of the station has contributed to that and has helped them have a safe, secure feeling. With regard to interface with the public, it would probably be about 40 to 50 people a year. In meeting people on the street it is common to get inquiries on how the radiation is going.

Glade

This is the fourth training session I have attended and I appreciate my participation in the program. The radiation data is usually between 8.5 and 10.3 so the PIC is quite constant. In regard to public interaction, I talk to my students and then generally when I am at the station there are people that come by and inquire about it. I would estimate that I interact with about 200 to 300 people through the year. A recommendation would be that when calling EPA, in regard to an equipment failure that someone from EPA would respond to us, as all we get is a recording. It would be helpful to know that the message has been received and the problem will be taken care of.

Bob Taft Inquired of the general feeling of PEPCON coming in to the Cedar City area. Glade responded that he felt that the first reaction was that the public was upset by it, but the employment has increased so feel the mood has changed. A new industry is also locating between PEPCON and Cedar City and will be associated with the industry.

Tom Judd, Station Manager - Delta, UT:

Tom

Indicated Alternate Beverly DeWyze could not attend the session, as her daughter is getting married this week. With reference to the data, everything has been standard. Have

had a couple of problems with the equipment operation, and would like to express my appreciation to the EPA group, Herb, Ross, and the others that assist. There haven't been any incidents with the station. With regard to public interaction, I wonder if Delta is located such a distance from the Nevada Test Site that the people don't show much concern or interest in the monitoring of the radiation level at the station. Often the inquiry received is wanting to know what the weather is. I have made contact with the Jeep Posse and the Sheriffs office to see if they wanted a presentation at their meetings, but haven't any response to date. I use the overhead transparencies in an ecology class and appreciate having them. Beverly teaches math at the middle-school and she had probably 35 or 40 students come over to the station, and with those that I taught I would estimate interaction with somewhere around 60 to 70 people.

No Report from Ely, NV: – Station Co-Managers did not attend session.

Myron Johnson, Station Manager – Goldfield, NV:

Myron

The radiation data have been stable. You can see the definite trends of a front coming through reflected back through the barograph. Quite a few people stop by and inquire about the station so I explain it to them. The equipment operation has been fairly good. I had the same problem with the refrigerator that Beatty had, but they moved the pump to the outside of the compartment and the temperature is holding well now. I try to get by the station site at least once a day. An incident did occur recently where somebody turned off both bottles of the noble gas sampler, they ran the pressure up and then shut off. The public interaction has been down, attributed to the fact that the mining in the community has been shut down for the past six months. The school schedules a trip to the station at least once or twice a year, however with inclement weather the group was cancelled in the spring. There is need to readdress the issue of my Alternate again. Through the year there was probably interaction with 75 to 100 people.

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

Jim

The radiation data is very consistent. The equipment operates well, and we are situated in a good location, in that when we call EPA we get service quickly and efficiently. They do a great job for us. I have tightened up the screws too tight that hold the door shut on the display for the PIC and completely wore them out. With the renovating of the high school building, the public interaction in Indian Springs has been great with the people who are working on that project. We take our classes out and explain the workings of the station, and explain the background radiation; however, there is very little inquiry from the community.

Larry

I take three science classes out to tour the station each year, which would be about 60 students. There has been more community involvement this summer than there has been for the four years I have been in the program. There has been interaction with about 100, including students.

Dr. Hiram Hunt, Station Manager – Las Vegas, NV:

Lois

Dr. Hunt's report was given by Mrs. Lois Hunt, as he is recuperating from an accident. The radiation data remains stable. The equipment has operated very well. We have one of the new noble gas samplers. The only comment that I have is that the cover is so secure and tight it takes many tries to lift the cover, then when it is up it sits on the

counter, and I would recommend that something be affixed to hold it up (possibly something similar to the device to hold up a car hood). The other thing that we noticed on the noble gas sampler is that there is no elapsed time record. Last week the stylus on the barograph was moving nicely and so was the tape, but was not touching. This has never happened before, but in checking the station before we left it had been fixed. The Las Vegas station is located near the Physical Education Building on the UNLV campus and along walkways, so therefore there are a lot of people walking by the station and are aware of it. On the UNLV campus during the summer there are programs for younger children and these children come down for tours. There would be about four or five groups of about 30 in one day. I would estimate public interaction to be between 15 – 20 excluding the summer groups since we met in December. The station is on the EPA parking lot, and it might be a consideration to relocate it to a more visible location for students on the campus.

Dale Jensen, Station Manager – Milford, UT:

Dale

Dale indicated that Alternate Manager Leon Gay was unable to attend because of prior commitment of a workshop at Utah State. The radiation levels haven't changed over the past year. The equipment is functioning very well. This past winter there were problems with the barograph, so had to take it home and put it inside and it worked good. Dale related a project that many science teachers throughout the country had participated in, where they were sent tomato seeds that had been in outer space and he referred to them as the "killer tomatoes." The seeds were on a shuttle satellite for a period, and they were brought back last year, then passed out to various teachers. I ordered seeds for 5 lab groups, there was one control group and a group that were radiated on the outer part of the satellite, and one was toward the inside of the satellite. After explaining this to the students, they informed their parents, who showed some concern as to whether or not they might be radioactive. Then an expert in the press was asked if there could be any harm from these tomatoes, and he answered in the affirmative. I took out my instruments and measured for radiation on all of the plants. It was determined that they could grow them, but they were not to be eaten. We had about 80% germination rate and 150 seeds in each group. The students are going to follow up on this, and as they ripen I will put them on the PIC and see if there is any radiation measurement. I use a lot of the information given at this and the winter training session in teaching the science class for grades 7 through 12, and it has been real helpful to me and has furthered my understanding of the problems with radiation. I interact mostly with students and to the parents through the students. I recommend that the barograph paper have lines marked so that whenever you look through the window you could read the barometric pressures, as the pressure readings are out on the edge and you can't read it. Interaction with people this past year was from 50 to 100.

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

Nick

This is my third year in the program and we really enjoy coming to the training session and appreciate the opportunity. It has been a great experience. The Overton/Logandale area continues to grow and the schools are getting larger each year. A new elementary school opens in Moapa this year and there are plans for another one. Community reaction to the program is favorable and the reports that go into the local newspaper of the record of the station readings gives a greater awareness. There doesn't seem to be a concern about what is going on, and I feel that is attributed to the fact that the EPA, DOE and the Nevada Test Site are probably doing a good job. This last month a group of people in the valley went on an overnight two-day trip to the Nevada Test Site and a lot

of those that went on the trip were very impressed. The only modification made to our equipment was that they brought out two air samplers, which is done yearly to calibrate and substantiate the data. The location of our station is not a location that attracts much public awareness. In a more viable location there would probably be a greater community interaction. The Scout groups come to the station, as one of the merit badge requirements is to visit a federal installation, so we give tours and explain the operation of the station. Both Jack and myself had an opportunity to participate in Town Meetings in Bunkerville and Mesquite this past month. I was impressed with the presentations given, however, the only thing that was disappointing was that the attendance was low, but possibly could be attributed to the fact that there isn't much concern or people see no problem in that area. In the last year there was interaction with 50 or 60 people at the station.

Al Giannotti, Station Manager – Pahrump, NV:

Al

I am glad to have the opportunity to come to the training session and to see all of you again. There is very little interaction in our community, and feel that is attributed to people feeling safe, and feel that with little public interaction it is a plus for the program. The local law enforcement officials come over and check the reading each day, and check the barometric pressure daily. The data are consistently normal. Equipment operation is fine. Pahrump is getting a new high school next year to accommodate the growth in the area. There was a Town Meeting in Pahrump, and also a presentation to the senior citizens and one to the students in the chemistry, physics, anatomy and physiology classes at the high school. I felt there was a good interaction with the students; in fact, two of the students did their year-end research paper on "physiological aspects of radiation" and used all the material that was handed out. The only recommendation might be that the idea of the shelf or table with handouts at the station would be a good one. In counting all the people at the Town Meeting there was interaction with probably 150.

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

Christy

The radiation data has been very regular. There hasn't been any equipment problem, other than in checking the station yesterday the refrigerator had stopped working. We had a Town Meeting and it was very well done and well attended. We also had a dinner to go along with it, which was most of our interaction. Often tourists stop by and I explain the station operation. The people of the community as a whole have been there for some time, know of the station and are comfortable with it. The Lincoln County Record newspaper has an article in it called the "Nuclear Informer," which gives facts on nuclear events in the area and general information, and that has been informative and interesting. My children are looking forward to a Test Site tour this fall through Rick Hardy at the Alamo High School, and feel that it is very beneficial in informing them of the Test Site and the happenings that go on there. Public interaction was with about 10 – 15 people.

Kevan Crawford, Faculty member of University of Utah – Salt Lake City, UT:

Kevan

I look at the station about once a month and have interaction with the students that manage it. The radiation data, over the past nine years that I have had involvement with it, hasn't really changed. It is interesting to watch the PIC readings go up and down with the storms and the changing pressure, and I use that as a teaching tool with the classes that we take out there. The equipment experiences occasional failure, but with the support we have it is taken care of within a reasonable amount of time to get the

equipment up and operating. With the older equipment, where the repair required a little more work and it was necessary for us to keep it operational, it was difficult and often we couldn't get the equipment operating in a timely manner, but operations have changed such that we depend more on the Las Vegas EPA group and this has increased the reliability of the equipment. The station is in a heavily traveled area, and I would estimate that there are several thousand people that go by every year, or have some kind of interaction with the courses we teach. Also the media come up from time to time and we show them the monitoring station, and they show interest in it, then it gets exposure on the television news.

Gary

There are about 100 students in the nuclear engineering program at the University of Utah, and Gary inquired if there were any of the teachers who would like to come up and visit the University. There have been a lot of visitors come down from Idaho, many districts like to visit the reactor and talk about scientific things, such as a major program in the development of artificial organs. There may be a resurgence in nuclear power because of concern over the greenhouse effects and the impact on weather and climatology. Regardless of feelings about the environment, nobody wants to turn off their electrical power.

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

Jack

The data doesn't change and the only equipment that really gives us a problem is the noble gas sampler. The rest of the equipment works relatively well. Jack asked if data could be made available from major cities as there are a lot of people who inquire of the readings of other cities, and feels that the information would provide a greater overall data comparison. There have been some interesting things occur. A lot of phone calls that come to me through the Chamber of Commerce come from Denver, New York, Los Angeles and Chicago, from people wanting to move into the area who have heard some scare stories and would like to have some comparison. Daryl Thome' responded that background data can be made available and he would get it to Jack. I have not had a lot of interaction at the station. From my prospective, primarily what has happened in the past 10 years is that we haven't changed Janet Gordon and Steve Erickson's mind one bit. The people who are violently against this still have the same concerns. The public as a whole seems to feel that what is being done is safe. I do believe that people feel comfortable with the station and the data, and this has been a good program in alleviating some fears about what is going on at the present. This past year two students from Pine View High School who were doing a history fair project on the Nevada Test Site got some information from me. They not only won locally but they took their displays back to the Nationals. I was asked to give several presentations on cold fusion, and in the process of this, the topic of fission came up, along with other things, and I had an opportunity to talk about the Community Radiation Monitoring program. I was also asked to give a forum at Dixie College on environment and there were some good questions and interaction about nuclear power. There were about 400 in attendance. David Burr is unable to be here, but he too takes tours to the station in working with his physics classes. I have used the concept of the station in my environmental class. I am currently working with Dr. Miles in Washington State University on some data which indicate nationally that physics and chemistry teachers in high school have not been presenting nuclear chemistry and nuclear physics to their students. We are currently working on a paper for the American Physics Society, which would indicate there is need to train people better in the colleges in terms of nuclear chemistry and nuclear physics, and of the concern that it is not getting from teacher to students, because it might not be getting to teachers in terms of college training. This has been a great ten years; we are a

growing and changing group and I have great appreciation for the people I have been associated with. I had interaction with probably around 1,000 people this past year.

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

Brian

At our station we have routine data. With regard to equipment operation, the PIC and part of the air sampler were replaced this past year. The most interesting event that occurred this past year was the Town Meeting held in Bishop where there were 62 in attendance. One of the members of the audience sent me a letter insulting the program, as well as the participants; however, he liked Dave Wheeler. That prompted me to write a letter to Bob Lucas at DRI with some suggestions that I had, and was informed that changes were already in process for the change of the meeting format and presentation. EPA graciously furnished us with a large container of liquid nitrogen and we did a super-conductor demonstration for our school. There was a tour of the Nevada Test Site and those that went enjoyed the tour and experience. Many were very suspicious going in but felt better after the tour. The hand-held instruments have been helpful as a teaching aid. There is a possibility of closing down our High School and busing the Junior and High School students over to Pahrump and Beatty. We might want to move the station, because if the school closes down the medical clinic is moving, so my recommendation is that if it were to be moved on the main highway there would be some visibility. There has possibly been interaction with 20 to 30 students.

Bob Taft stated that at the Bishop Town Meeting there were 62 in attendance and 44 had previously been arrested or incarcerated at the Test Site, so it was not a very friendly meeting. Bob also said that they had a breakfast meeting with the Bishop Chamber of Commerce and it went very well, doing essentially the same thing that turned into a mess that night.

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

Larry

A great concern in Tonopah is whether the Stealth fighter is going to be moved to New Mexico, and if it is there will be about 500 to 1000 people who will be out of a job, but that decision will be made by the U.S. Air Force sometime next year. One time I went to the station to check the tritium, opened up the refrigerator and there was no pump, then I saw that it was working, and in further investigation found that EPA had put the pump behind the refrigerator. EPA also put some red tape around some poles to protect it as we are located in the county parking lot by the court house, and on occasion someone would back into it and bump the poles so now they are marked with red tape, which has helped. The data have been consistent. On one occasion Herb called and said my personal dosimeter had some significant readings, and the only thing I could come up with is that the Boy Scouts were doing a lot of camping and I was putting Coleman lantern mantles on the dresser after each camping trip and that was where the I would place the TLD so am sure that it picked up on those. There has been some public interaction, especially from students as they walk by the station and ask questions about it. The Nevada history teacher, as part of his course, teaches about the Nevada Test Site, as some of the parents work there and for the kids to know what is going on there, so I have provided him with a lot of information and handouts from DOE and EPA. A couple of students were assigned to do a report on the history of the Test Site, so I provided them with some additional information.

Mark

I have a report on an interaction with Rachel station, when I was traveling with the track team. I went over to see what their station looked like, and the track team and adults followed me, and so I gave them a tour of the station.

APPENDIX B

Documentation of Public Meetings

**TOWN MEETING ON ACTIVITIES AT THE
NEVADA TEST SITE AND YUCCA MOUNTAIN**

**Community Center
Pahrump, Nevada
Friday, February 9, 1990**

*** * * TENTATIVE AGENDA * * ***

**7:00 P.M. Welcome and IntroductionMr. Marvin Veneman
Chairman, Pahrump Town Board**

**Opening Remarks and Introduction of
Speakers and Panel..... Mr. Bob Taft**

Film - Testing Nuclear Weapons

**"Activities of the Nevada Operations
Office"..... Mr. Bob Taft**

7:40 P.M. "Radiation Monitoring Program"..... Mr.Daryl Thome'

**8:10 P.M. "High-Level Radioactive Waste Manage-
ment" and Film-Radioactive Waste
Transportation..... Mr. Max Powell**

8:30 P.M. Question and Answer Period..... Panel

Refreshments

Panel

**Al Giannotti, Manager, Pahrump Community Radiation
Monitoring Program Station**

**Paul R. Fenske, Professor Emeritus,
Water Resources Center, Desert Research Institute,
University of Nevada System**

**Max Powell, State Liaison, Yucca Mountain Project Office, U.S.
Department of Energy**

**Robert W. Taft, Manager's Office, Nevada Operations Office,
U.S. Department of Energy**

**Daryl J. Thome', Chief, Field Monitoring Branch, Environmental
Monitoring Systems Laboratory, U.S. Environmental Protec-
tion Agency**

**David L. Wheeler, Senior Health Physicist, Nevada Operations
Office, U.S. Department of Energy**

**This meeting is to provide information to the community. If you
have any questions, please jot them down. We will be glad to
answer them at the end of the meeting.**

PUBLIC INVITED
TO A MEETING ON
ACTIVITIES AT THE
NEVADA TEST SITE

7:00 PM
FRIDAY, FEBRUARY 9, 1990
COMMUNITY CENTER
PAHRUMP, NEVADA

— PURPOSE OF THE MEETING —

REPRESENTATIVES FROM THE U.S. ENVIRONMENTAL PROTECTION AGENCY, THE U.S. DEPARTMENT OF ENERGY, AND THE DESERT RESEARCH INSTITUTE WILL BE PRESENT TO EXPLAIN:

- NUCLEAR WEAPONS TESTING AND THE ASSOCIATED OCCUPATIONAL AND PUBLIC SAFETY PROGRAMS AT THE NEVADA TEST SITE.
- OFF-SITE RADIATION MONITORING PROGRAM.
- UPDATE ON STUDIES OF YUCCA MOUNTAIN AS A POSSIBLE HIGH-LEVEL RADIOACTIVE WASTE-DISPOSAL SITE.

A TWO HOUR PRESENTATION IS SCHEDULED WITH ADDITIONAL TIME FOR QUESTIONS AND ANSWERS.

REFRESHMENTS WILL BE SERVED

EVERYONE IS WELCOME

FOR MORE INFORMATION, PLEASE TELEPHONE:

AL GIANNOTTI 727-5386

LARRY GOINS 727-6670

BOB LUCAS OR NATE COOPER 798-5771 (LAS VEGAS)

TOWN MEETING ON ACTIVITIES AT THE
NEVADA TEST SITE

City Auditorium
377 West Line Street
Bishop, California
Thursday, February 15, 1990

* * * TENTATIVE AGENDA * * *

7:00 P.M. Welcome and IntroductionMr. Clyde E. Coons
Mayor of Bishop
Opening Remarks and Introduction of
Speakers and Panel..... Mr. Bob Taft
Film - Testing Nuclear Weapons
"Activities of the Nevada Operations
Office"..... Mr. Bob Taft
7:40 P.M. "Radiation Monitoring Program"..... Mr. Daryl Thome'
8:10 P.M. Question and Answer Period..... Panel
Refreshments

Panel

Brian Brown, Manager, Community Radiation Monitoring Program
Station, Shoshone California

Dr. Peter A. Krenkel, Professor of Civil Engineering,
University of Nevada Reno

Robert W. Taft, Manager's Office, Nevada Operations Office,
U.S. Department of Energy

Dr. Norm Sunderland, Chief, Dose Assessment Branch,
Environmental Monitoring Systems Laboratory, U.S.
Environmental Protection Agency

David L. Wheeler, Senior Health Physicist, Nevada Operations
Office, U.S. Department of Energy

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have any questions, please jot them down. We will be glad to
answer them at the end of the meeting.

PUBLIC INVITED
TO A MEETING ON
ACTIVITIES AT THE
NEVADA TEST SITE

7:00 PM
THURSDAY, FEBRUARY 15, 1990
CITY COUNCIL CHAMBERS
377 WEST LINE STREET
BISHOP, CALIFORNIA

— PURPOSE OF THE MEETING —

REPRESENTATIVES FROM THE UNIVERSITY OF NEVADA-RENO, THE U.S. ENVIRONMENTAL PROTECTION AGENCY, THE U.S. DEPARTMENT OF ENERGY, AND THE DESERT RESEARCH INSTITUTE WILL BE PRESENT TO EXPLAIN:

- NUCLEAR WEAPONS TESTING AND THE ASSOCIATED OCCUPATIONAL AND PUBLIC SAFETY PROGRAMS AT THE NEVADA TEST SITE.
- OFF-SITE RADIATION MONITORING PROGRAM.
- UPDATE ON STUDIES OF YUCCA MOUNTAIN AS A POSSIBLE HIGH-LEVEL RADIOACTIVE WASTE-DISPOSAL SITE.

A TWO HOUR PRESENTATION IS SCHEDULED WITH ADDITIONAL TIME FOR QUESTIONS AND ANSWERS.

REFRESHMENTS WILL BE SERVED

EVERYONE IS WELCOME

FOR MORE INFORMATION, PLEASE TELEPHONE:

BOB LUCAS OR NATE COOPER (702) 798-5771 (LAS VEGAS)

TOWN MEETING ON ACTIVITIES AT THE
NEVADA TEST SITE AND YUCCA MOUNTAIN
The Little A-LE-INN
Rachel, Nevada
7:00 P.M. Monday, April 16, 1990

7:00 P.M. Welcome and Introduction.....Christy Castleton

7:05 P.M. Opening Remarks and Introduction
of Speakers and PanelNick Aquilina, Manager,
Nevada Operations Office
U.S. Department of Energy

7:15 P.M. Yucca Mountain Update.....Ace Robison

7:30 P.M. Activities of the Nevada Operations Office.....Bob Taft

7:45 P.M. Radiation Monitoring Program.....Daryl Thome'

8:00 P.M. DOE Environmental Programs.....Roger Jacobson

8:15 P.M. Question and Answer Period.....Nick Aquilina, Moderator
Refreshments

Panel

Christy Castleton, Manager, Rachel Community Radiation
Monitoring Program Station

Dr. Roger Jacobson, Research Professor, Desert Research Institute,
University of Nevada System

Ace Robison, Special Assistant for Institutional Affairs, Yucca
Mountain Project, Office, U.S. Department of Energy

Bob Taft, Manager's Office, Nevada Operations Office,
U.S. Department of Energy

Daryl Thome', Chief, Field Monitoring Branch,
Environmental Monitoring Systems Laboratory,
U.S. Environmental Protection Agency

David Wheeler, Senior Health Physicist, Nevada Operations Office,
U.S. Department of Energy

This meeting is to provide information to the community. If you have any questions, please jot them down. We will be glad to answer them at the end of the meeting.

YOU'RE INVITED

TO A MEETING ON

ACTIVITIES AT THE

NEVADA TEST SITE

Monday, April 16, 1990
Spaghetti Feed at 6:00 PM
Meeting at 7:00 PM
Rachel Bar and Grill – The Little A-LE-INN

— PURPOSE OF THE MEETING —

REPRESENTATIVES FROM THE U.S. ENVIRONMENTAL PROTECTION AGENCY, THE U.S. DEPARTMENT OF ENERGY, AND THE DESERT RESEARCH INSTITUTE WILL BE PRESENT TO EXPLAIN:

- NUCLEAR WEAPONS TESTING AND THE ASSOCIATED OCCUPATIONAL AND PUBLIC SAFETY PROGRAMS AT THE NEVADA TEST SITE.
- OFF-SITE RADIATION MONITORING PROGRAM.
- ENVIRONMENTAL ISSUES

A ONE HOUR PRESENTATION IS SCHEDULED WITH ADDITIONAL TIME FOR QUESTIONS AND ANSWERS.

REFRESHMENTS WILL BE SERVED

EVERYONE IS WELCOME

FOR MORE INFORMATION, PLEASE TELEPHONE:

CHRISTY CASTLETON (702) 729-2674

RUTHE AGEE (702) 729-2620

TOWN MEETING ON ACTIVITIES AT THE
NEVADA TEST SITE AND YUCCA MOUNTAIN
Multi-Purpose Room
Pahranagat Valley High School
7:00 P.M. Tuesday, April 17, 1990

7:00 P.M. Welcome and Introduction.....Mrs. Verna Hansen
Chair, Alamo Town Board

7:05 P.M. Opening Remarks and Introduction
of Speakers and PanelNick Aquilina, Manager,
Nevada Operations Office
U.S. Department of Energy

7:15 P.M. Yucca Mountain Update.....Ace Robison

7:30 P.M. Activities of the Nevada Operations Office.....Bob Taft

7:45 P.M. Radiation Monitoring Program.....Daryl Thome'

8:00 P.M. DOE Environmental Programs.....Roger Jacobson

8:15 P.M. Question and Answer Period.....Nick Aquilina, Moderator
Refreshments

Panel

Dr. Roger Jacobson, Research Professor, Desert Research Institute,
University of Nevada System

Ace Robison, Special Assistant for Institutional Affairs, Yucca
Mountain Project Office, U.S. Department of Energy

Dell Sullivan, Manager, Alamo Community Radiation Monitoring
Program Station

Bob Taft, Manager's Office, Nevada Operations Office,
U.S. Department of Energy

Daryl Thome', Chief, Field Monitoring Branch, Environmental
Monitoring Systems Laboratory, U.S. Environmental Protection
Agency

David Wheeler, Senior Health Physicist, Nevada Operations Office,
U.S. Department of Energy

This meeting is to provide information to the community. If you have any questions, please jot them down. We will be glad to answer them at the end of the meeting.

YOU'RE INVITED

TO A MEETING ON

ACTIVITIES AT THE

NEVADA TEST SITE

7:00 PM
TUESDAY, APRIL 17, 1990
MULTI-PURPOSE ROOM
PAHRANAGAT VALLEY HIGH SCHOOL
ALAMO, NEVADA

— PURPOSE OF THE MEETING —

REPRESENTATIVES FROM THE U.S. ENVIRONMENTAL PROTECTION AGENCY, THE U.S. DEPARTMENT OF ENERGY, AND THE DESERT RESEARCH INSTITUTE WILL BE PRESENT TO EXPLAIN:

- NUCLEAR WEAPONS TESTING AND THE ASSOCIATED OCCUPATIONAL AND PUBLIC SAFETY PROGRAMS AT THE NEVADA TEST SITE.
- OFF-SITE RADIATION MONITORING PROGRAM.
- ENVIRONMENTAL ISSUES

A ONE HOUR PRESENTATION IS SCHEDULED WITH ADDITIONAL TIME FOR QUESTIONS AND ANSWERS.

REFRESHMENTS WILL BE SERVED

EVERYONE IS WELCOME

FOR MORE INFORMATION, PLEASE TELEPHONE:

DELL SULLIVAN (702) 725-3544
RICK HARDY (702) 725-3442

TOWN MEETING ON ACTIVITIES AT THE
NEVADA TEST SITE
Community Hall
Dolan Springs, Arizona
7:00 P.M. Thursday, May 24, 1990

7:00 P.M. Welcome and Introduction.....Mrs. Helen Plaunty
President, Community Council

7:05 P.M. Opening Remarks and Introduction
of Speakers and PanelLinda M. Smith
Acting Deputy Manager
Nevada Operations Office
U.S. Department of Energy

7:15 P.M. Yucca Mountain Update.....Max Powell

7:30 P.M. Movie - "Testing Nuclear Weapons"

7:45 P.M. Activities of the Nevada Operations Office.....Bob Taft

8:00 P.M. Radiation Monitoring Program.....Daryl Thome'

8:15 P.M. DOE Environmental Programs.....Roger Jacobson

8:30 P.M. Question and Answer Period.....Linda M. Smith, Moderator

Refreshments

Panel

Dr. Roger Jacobson, Research Professor, Desert Research Institute,
University of Nevada System

Max Powell, State Liaison, Yucca Mountain Project Office,
U.S. Department of Energy

Bob Taft, Manager's Office, Nevada Operations Office,
U.S. Department of Energy

Daryl Thome', Chief, Dose Assessment Branch,
Environmental Monitoring Systems Laboratory,
U.S. Environmental Protection Agency

David Wheeler, Senior Health Physicist, Nevada Operations Office,
U.S. Department of Energy

This meeting is to provide information to the community. If you have any questions, please jot them down. We will be glad to answer them at the end of the meeting.

PUBLIC INVITED
TO A MEETING ON
ACTIVITIES AT THE
NEVADA TEST SITE

7:00 PM
THURSDAY, MAY 24, 1990
COMMUNITY HALL
DOLAN SPRINGS, ARIZONA

— PURPOSE OF THE MEETING —

REPRESENTATIVES FROM THE U.S. ENVIRONMENTAL PROTECTION AGENCY, THE U.S. DEPARTMENT OF ENERGY, AND THE DESERT RESEARCH INSTITUTE WILL BE PRESENT TO EXPLAIN:

- NUCLEAR WEAPONS TESTING AND THE ASSOCIATED OCCUPATIONAL AND PUBLIC SAFETY PROGRAMS AT THE NEVADA TEST SITE.
- OFF-SITE RADIATION MONITORING PROGRAM.
- ENVIRONMENTAL ISSUES.

A ONE HOUR PRESENTATION IS SCHEDULED WITH ADDITIONAL TIME FOR QUESTIONS AND ANSWERS.

REFRESHMENTS WILL BE SERVED
EVERYONE IS WELCOME

FOR MORE INFORMATION, PLEASE TELEPHONE:

BOB LUCAS OR NATE COOPER 702 798-5771 (LAS VEGAS)

TOWN MEETING ON ACTIVITIES AT THE
NEVADA TEST SITE AND YUCCA MOUNTAIN
Community Center
Bunkerville, Nevada
7:00 P.M. Wednesday, June 27, 1990

7:00 P.M. Welcome and Introduction.....Mrs. Loye Houston
Chair, Bunkerville Town Board

7:05 P.M. Opening Remarks and Introduction.....Jim Magruder
of Speakers and Panel Assistant Manager
Nevada Operations Office
U.S. Department of Energy

7:15 P.M. Yucca Mountain UpdateAce Robison

7:30 P.M. Activities of the Nevada Operations Office..Bob Taft

7:45 P.M. Radiation Monitoring Program.....Daryl Thome'

8:00 P.M. DOE Environmental Programs.....Roger Jacobson

8:15 P.M. Question and Answer Period....Jim Magruder, Moderator

Refreshments

Panel

Nick Bowler, Manager, Overton Community Radiation Monitoring
Program Station

JoAnne Burrows, Senior Health Physicist, Nevada Operations
Office, U.S. Department of Energy

Dr. Roger Jacobson, Research Professor, Desert Research
Institute, University of Nevada System

Jack Nelson, Alternate Manager, Overton Community Radiation
Monitoring Program Station

Ace Robison, Special Assistant for Institutional Affairs,
Yucca Mountain Project Office
U.S. Department of Energy

Bob Taft, Manager's Office, Nevada Operations Office,
U.S. Department of Energy

Daryl Thome', Chief, Dose Assessment Branch, Environmental
Monitoring Systems Laboratory, U.S. Environmental
Protection Agency

This meeting is to provide information to the community. If you have any questions, please jot them down. We will be glad to answer them at the end of the meeting.

PUBLIC INVITED
TO A MEETING ON
ACTIVITIES AT THE
NEVADA TEST SITE

7:00 PM
WEDNESDAY, JUNE 27, 1990
COMMUNITY CENTER
BUNKERVILLE, NEVADA

— PURPOSE OF THE MEETING —

REPRESENTATIVES FROM THE U.S. ENVIRONMENTAL PROTECTION AGENCY, THE U.S. DEPARTMENT OF ENERGY, AND THE DESERT RESEARCH INSTITUTE WILL BE PRESENT TO EXPLAIN:

- NUCLEAR WEAPONS TESTING AND THE ASSOCIATED OCCUPATIONAL AND PUBLIC SAFETY PROGRAMS AT THE NEVADA TEST SITE.
- OFF-SITE RADIATION MONITORING PROGRAM.
- ENVIRONMENTAL ISSUES.
- UPDATE ON THE YUCCA MOUNTAIN PROJECT

A ONE AND ONE-HALF HOUR PRESENTATION IS SCHEDULED WITH ADDITIONAL TIME FOR QUESTIONS AND ANSWERS.

REFRESHMENTS WILL BE SERVED

EVERYONE IS WELCOME

FOR MORE INFORMATION, PLEASE TELEPHONE:

BOB LUCAS OR NATE COOPER 798-5771 (LAS VEGAS)

NICK BOWLER 398-3596 OR JACK NELSON 398-3503 (LOGANDALE)

TOWN MEETING ON ACTIVITIES AT THE
NEVADA TEST SITE AND YUCCA MOUNTAIN
City Hall
Mesquite, Nevada
7:00 P.M. Thursday, June 28, 1990

7:00 P.M. Welcome and Introduction.....Mr. Jimmie Hughes
Mayor of Mesquite

7:05 P.M. Opening Remarks and Introduction.....Jim Magruder
of Speakers and Panel Assistant Manager
Nevada Operations Office
U.S. Department of Energy

7:15 P.M. Yucca Mountain UpdateMax Powell

7:30 P.M. Activities of the Nevada Operations Office..Bob Taft

7:45 P.M. Radiation Monitoring Program.....Daryl Thome'

8:00 P.M. DOE Environmental Programs.....Roger Jacobson

8:15 P.M. Question and Answer Period....Jim Magruder, Moderator

Refreshments

Panel

Nick Bowler, Manager, Overton Community Radiation Monitoring
Program Station

JoAnne Burrows, Senior Health Physicist, Nevada Operations
Office, U.S. Department of Energy

Dr. Roger Jacobson, Research Professor, Desert Research
Institute, University of Nevada System

Jack Nelson, Alternate Manager, Overton Community Radiation
Monitoring Program Station

Max Powell, Institutional Liaison, Yucca Mountain Project
Office, U.S. Department of Energy

Bob Taft, Manager's Office, Nevada Operations Office,
U.S. Department of Energy

Daryl Thome', Chief, Field Monitoring Branch, Environmental
Monitoring Systems Laboratory, U.S. Environmental
Protection Agency

This meeting is to provide information to the community. If you have any questions, please jot them down. We will be glad to answer them at the end of the meeting.

PUBLIC INVITED
TO A MEETING ON
ACTIVITIES AT THE
NEVADA TEST SITE

7:00 PM
WEDNESDAY, JUNE 27, 1990
COMMUNITY CENTER
BUNKERVILLE, NEVADA

7:00 PM
THURSDAY, JUNE 28, 1990
MESQUITE CITY HALL
E. MESQUITE BLVD. AND YUCCA
MESQUITE, NEVADA

— PURPOSE OF THE MEETING —

REPRESENTATIVES FROM THE U.S. ENVIRONMENTAL PROTECTION AGENCY, THE U.S. DEPARTMENT OF ENERGY, AND THE DESERT RESEARCH INSTITUTE WILL BE PRESENT TO EXPLAIN:

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NICK BOWLER 398-3596 OR JACK NELSON 398-3503 (LOGANDALE)

Spectrum Friday, June 22, 1990

Local & Region

Nuclear testing topic of meets

MESQUITE, Nev. — Underground nuclear weapons testing and other U.S. Department of Energy programs will be discussed June 27-28 at public meetings in Bunkerville and Mesquite, Nev.

James Magruder, assistant manager of DOE's Nevada Operations Office, will moderate the panel discussion.

Town hall meetings are scheduled June 27 at the Community Center in Bunkerville and June 28 at the City Hall in Mesquite. Both meetings will start at 7 p.m.

Representatives of DOE's Nevada Operations Office, the U.S. Environmental Protection Agency and the University of Nevada's Desert Research Institute will discuss the Nevada Test Site and DOE's Community Radiation Monitoring Program.

A DOE staff member will report on the current status of the Yucca Mountain Project and the studies to determine the feasibility of building a repository for high-level radioactive waste and spent fuel from commercial nuclear power plants.

**St. George Chamber of Commerce
Wednesday, September 26, 1990**

Fallout in St. George: Past and Present

Q & A Panel John F. (Jack) Heppler
Manager, St. George Station
Community Radiation Monitoring Program

Jack has taught Biology at Dixie college since 1984. Before that, he taught for 15 years at Dixie Jr. High and Dixie High school. He was born in Cedar City, grew up in Beaver, and has a B.S. from Utah State and an M.S. from Michigan State.

Daryl J. 'Thome'
Acting Deputy Director
Nuclear Radiation Assessment Division
Environmental Monitoring Systems Laboratory
U. S. Environmental Protection Agency

Daryl has an M.S. from UNLV, and has worked in Las Vegas, his hometown, for EPA for 25 years. Before assuming his present duties, he was Chief of EPA's Field Monitoring Branch, responsible for sample collection and analysis for the Community Radiation Monitoring program and other EPA monitoring networks.

David L. Wheeler
Senior Health Physicist
Nevada Operations Office
U. S. Department of Energy

David's work as a health physicist involves the study of health effects of radiation. He has a B.S. and an M.S., both from BYU in Physics and has served as Deputy Manager of the Off-Site Radiation Exposure Review Project. This project is designed to evaluate the radiation doses experienced by people as the result of fallout from the Atmospheric Nuclear testing at the Nevada Test Site. David was Radiation Safety Officer at BYU for five years, and has been with DOE for 10 years. He was born and raised in Ogden, Utah.

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