

Bridging the Credibility Gap: Citizens' Monitoring Role Raises Communities' Comfort Level



DRI's CEMP Team

Left to right: Lynn Karr, Ted Hartwell and Craig Shadel in front of the Las Vegas CEMP station at DRI's Southern Nevada Science Center. Visitors can view the information at the station, or go to DRI's web site to see it. Members of the CEMP Team not pictured are Ken Giles, Scott Campbell, Dee Donithan, and Cheryl Martin.

Lynn Karr leads a life that brings to mind Glenn Campbell's lonesome "Wichita Lineman." Spending long weeks on the road visiting tiny towns and remote ranches in Nevada and Utah, Karr helps keep a network of people and instruments working to detect any lingering radioactivity from the Nevada Test Site's nuclear weapons tests.

The network Karr maintains is the heart of the Community Environmental Monitoring Program (CEMP), funded by the U.S. Department of Energy's Nevada Operations Office (DOE/NV). Since 1981, CEMP has helped give residents surrounding the test site a direct role in looking after their own health and well-being. A spin-off of a similar citizen-based effort established in Pennsylvania following the 1979 reactor accident at Three Mile Island, the program enlists local people at each monitoring site to supervise an instrument package that provides visible, real-time status reports of radiation levels and weather conditions.

Ted Hartwell, an associate research archaeologist in the Desert Research Institute's Southern Nevada Science Center in Las Vegas, is the project manager for CEMP, and Karr's supervisor. Hartwell says the fact that local citizens operate and manage the instrument network is essential for

overcoming a credibility gap between local perception and official information on the level of radiation lingering from atmospheric tests.

"The people who live in these rural areas have a pretty healthy skepticism when it comes to government to begin with," says Hartwell. "They're also used to doing things for themselves. So, after the 'downwinders' issues became front page news, and other reports began to circulate in the '70s about possible exposure to fallout from the testing, there was a lot of genuine concern about what was really out there."

Atmospheric testing of nuclear weapons by the United States and Soviet Union ended in October 1963, but a continuous air sampling network was not established to monitor possible radiation from the test site until 1961. That monitoring effort, initially conducted by the U.S. Public Health Service, was assumed by the newly established U.S. Environmental Protection Agency (EPA) in 1970.

Following the March 1979 reactor accident at the Three Mile Island Nuclear Power Generating Plant, EPA radiation monitoring crews based in Las Vegas were dispatched to Middletown, Pennsylvania, to establish a radiation monitoring network around the plant. By the following summer, growing concern and anxiety about possible radiation levels—and distrust of government information about the extent of danger—gave birth to the Citizen's Monitoring Program. This program provided people residing near each site the opportunity to be selected by local officials to receive training by Pennsylvania State University to operate and maintain the monitoring sites.

The credibility of monitoring reports among area residents rose significantly. Meanwhile, western residents' increasing anxiety about radiation exposure from nuclear weapons tests convinced DOE to launch a similar citizen-based effort in Nevada. DRI was instrumental in creating the CEMP program.

Karr, who worked on EPA's monitoring program before joining DRI, travels to each site monthly, checking equipment and troubleshooting the operation. But he's not just the technical support department for CEMP; Karr is also a sort of roving ambassador for the program, getting to know the residents and listening to their comments and concerns.

"I wish I could tell the stories of all the station managers. In their careers they are everything from teachers to engineers, to people who just care about their community. Most of the station managers are high school science teachers or come from other backgrounds where they have been associated with science and technology," says Karr. "We wanted that so the data collected would mean something to them and so they would be able to relay the information to the communities."

Once a week the Community Environmental Monitors (CEMs) replace filters in their samplers that sift the air for radioactive particles and send the used ones to DRI Assistant Research Geochemist Craig Shadel in Las Vegas. Shadel, who also tends to several CEMP sites near Las Vegas, sends the filters to a commercial lab for analysis. He compiles the air sample results into reports that are sent quarterly to the CEMs in each community and to DOE. The monthly radiation summaries, as well as weather data updated regularly during each day, are also available on the CEMP pages in DRI's web site at: <http://www.cemp.dri.edu>. The web information is maintained by Greg McCurdy in DRI's Western Regional Climate Center in Reno.

The CEMs are available to discuss monitoring results with the public and regularly speak to community and school groups. In addition to Karr's monthly visits to keep the CEMs up to date, Hartwell soon hopes to reinstate a program of annual new equipment and standards training retreats for the entire CEMP crew. The retreats will also include reviewing local questions and operating problems.

Says "lineman" Karr, "It takes a little bit of time to learn the countryside and the people, but it is well worth the time. I want the people to be able to trust DRI and DOE, and know that it is safe for them to live in their communities. It's really like visiting a far-flung family in many ways. Most people who live in Nevada's larger cities probably have no idea of the types of technical skill and professional training you run into out in some very isolated places. It doesn't fit the stereotype in most people's minds."

Karr says that sometimes the local expectations for the program can exceed reality. "While I was working at the St. George, Utah, station, I had one guy ask me why I didn't predict the earthquake that occurred a few days earlier in nearby Springdale, Utah. "He saw the barograph we have at the station and figured that it was a seismic instrument, and said 'by God, you should have warned those people that an earthquake was coming!' I talked for twenty minutes to convince that guy that we were sampling for radiation and that what he thought was a seismograph was really a barograph," says Karr.



Boulder City's CEMP Station Monitors
Periodically checking the station instruments and keeping records of its condition occupy Bradford L. Benson and Linda Lee Hafen at the Boulder City CEMP site.

"On the same note I have locals that ask me if they should be glowing yet!"

Thankfully no one will be glowing from radiation in rural Nevada or Utah, and with the CEMP's monitoring sites, the residents can see the facts for themselves.

John Doherty

Tonopah's CEMP Station



This station in Tonopah is typical of the CEMP sites in operation across Nevada and Utah. The instruments, starting at the left are:

Particulate Sampler: Collects radioactive particles by pulling air through a paper filter. (The lower sampler on the left is being used to calibrate the stations identical sampler above it.)

Thermoluminescent Dosimeter (TLD): Determinesthe ambient or "natural background" level of radioactivity to compare with radiation from any other source.

Exposure Rate Recorder: Makes continuous measurements of radiation exposure rates.

Microbarograph: Measures and records barometric pressure for use in interpreting the record of radiation exposure. Changes inatmospheric pressure affect the escape of naturally occurring radioactive gases, likeradon and thoron, from the earth, changing the natural background radioactivity.

Meteorological Instruments: Record air temperature, humidity, wind speed and direction, solar radiation, barometric pressure, and precipitation.