

## Radiological Defense and the Volunteer Health Physicist: Joining the Medical Reserve Corps

Mark L. Maiello, PhD



If a radiological dispersal device successfully deployed in your town, village, or city, would you be inclined to provide your services as a radiological expert to first responders and the public? I cannot speak for you, as this is a question that involves consideration of serious matters—many of them personal. But we all know post-Katrina, post-BP oil spill, post-the-next-crisis, that the will to reach out and help is very healthy in this country. Professional health physicists are like most everyone else: concerned, interested, willing to sacrifice, and cognizant that all their effort to obtain their degrees and perfect their craft is really meaningless if it is not practiced under conditions of potential harm to the public.

When the New York City Department of Health and Mental Hygiene (NYCDOH), the Centers for Disease Control and Prevention (CDC), and the Conference of Radiation Control Program Directors pooled their resources to present the Symposium on Developing a Radiological Volunteer Capacity in New York City on 22 June 2010, I believe that they tapped into a deep well of unrealized public service. Of course, no city in the United States was ever attacked (now almost 10 years ago!) like New York was. But the CDC has already discovered that radiological volunteerism exists in other states of the nation far flung from New York. Six have submitted CDC proposals to recruit and train radiation professionals for Medical Reserve Corps (MRC) volunteer efforts. Certainly, the desire to lend expertise and a helping hand are universal human traits that only need be directed and targeted to

achieve the greatest impact. That is what the MRC is trying to do.

The MRC is a federal creation that New York City has used as a model for its own MRC. The NYC MRC, like the federal MRC, goes way beyond considering radiological response to a crisis. Mass sheltering, assisting with a medical response to a pandemic or biological attack, and the running of community health care (emergency relief) centers are the main thrusts of the MRC. But now there is a louder, more urgent call for the expertise of health physicists—an appropriate and welcome, if somewhat belated, invitation.

At the NYC symposium, presentations by Armin Ansari, Andy Karam, and employees of the NYCDOH described the framework of the volunteer response, the local deployable detection equipment and software capability and, most importantly, the reasons one should become a radiological volunteer. In a radiological response, health physicists could be expected to assist with radiation monitoring of the environment, in the workplace, at hospitals, at emergency operations centers, and at community health care and other public reception areas. Other duties may arise as needed, such as assisting with internal or public communications and helping to triage the injured. In preparation for a response, volunteers will train first responders and medical support personnel about radioactivity, thus reducing fear over it while simultaneously improving our overall response to its potential malevolent use.

In his presentation, Andy Karam stated the cold, hard numbers. It

takes 135 people to survey 1,000 members of the public per hour. Over 100,000 person-hours are needed to survey about 1 million people. In a city the size of New York, just 10 percent of the population would be about 800,000 people (in response to the  $^{137}\text{Cs}$  accident in Goiânia, Brazil, about 11 percent of the population was screened). Need we say more about the need for “many health physicists” in a radiological crisis?

Other reasons to sign up with the MRC are more obvious. For one, health physicists can help to alleviate some of the burden that hospitals and community health care centers will experience as the injured surge into them for help. By detecting, advising about, and controlling radioactive contamination, they can help medical experts focus on the job of alleviating pain and saving lives. By lending their experience as radiation safety officers from hospitals, government, and private industry, they bring knowledge about the workings of large, complex organizations and the communications requirements needed to reach personnel who are simultaneously focused and distracted by the dynamic situation around them. But most importantly, they bring their knowledge of radiation detection, contamination control, decontamination procedures, and dosimetry to a public health arena that has little or no expertise in this area save perhaps for some medical physicists, nuclear medicine specialists, and industrial hygienists who are best at other crafts that they could be performing during an emergency. Simply put, if we don't help, others perhaps less

qualified will be forced to. It is our game to play and win.

Another reason to formally sign up with the MRC: if you think you can just show up at the disaster waiving your Geiger counter—well meaning as that may be—reconsider. If you do that, you will be turned away. The MRC is a means to identify and register trained experts. Only they will be allowed to help. The MRC organizes human resources. Thus, volunteers never

self-deploy. They get their instructions via electronic communications such as telephones, pagers, and emails.

It is true that incidents analogous to Goiânia (enthusiastically explained at the symposium by guest speaker Joyce Lipsztein, who was on-scene back in 1987) may be once-in-a-lifetime events. It is true and certainly desirable that an improvised nuclear device or a radiological dispersal device may

never be detonated in any U.S. city. Volunteering may only amount to receiving (and giving) some interesting training and perhaps acquiring a certificate or a lapel pin. But the message that it sends to both friend and foe is that we won't sit around counting that the odds will work in our favor. It does send a message that as a profession and a nation, we will be standing ready to speed the recovery of our towns, cities, and country.

To learn more about the federal MRC, go to [www.medicalreservecorps.gov/HomePage](http://www.medicalreservecorps.gov/HomePage).

To sign up for the NYC MRC, go to [www.nyc.gov/medicalreservecorps](http://www.nyc.gov/medicalreservecorps).

## Book Review

### *The Radiance of France: Nuclear Power and National Identity after World War II*

by Gabrielle Hecht • MIT Press, Cambridge, MA • 2009; 461 pp.; soft cover; \$25.00

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Geoffrey G. Eichholz

It may be a commentary on the state of the nuclear industry that there seem to be more books about it getting published now from historians than by engineers. *The Radiance of France: Nuclear Power and National Identity after World War II*, by Gabrielle Hecht, was published originally in 1998 and is now reissued with a new foreword by Michel Callon and a new afterword. It traces the development of nuclear power in France through the 1970s, with a reasonable description of technical developments to explore the concomitant social and political factors involved. By any measure the French nuclear program has been a resounding success, spearheaded by a single part-Government-owned utility, Electricite' de France (EDF), with little concern for competitiveness, to supply over 75 percent of electric power in France and enough capacity to export substantial amounts of

power to neighboring countries. The author goes to considerable pains to stress the “Frenchness” of this approach, but few would argue with its success. The goal of the author is declared “to trace the social, political and cultural life of reactors as artifacts,” not an objective that would appeal to many engineers or scientists.

As the history unrolls, it is clear that progress was by no means smooth or painless. Successive chapters describe the role and status of French technocrats, largely embedded in the techno-political regimes represented by the Commissariat a l'Energie Atomique (CEA), a government agency, on the one hand, and the utility, EDF, on the other and their respective facilities and contributions to the evolving nuclear program. Initially, gas-cooled graphite-moderated reactors predominated, though later designs moved to water-cooled technology. The book chronicles this process in

detail, including the involvement of labor unions and the 1969 CEA strike. Less attention is paid to the French program on breeder reactors, which do not even appear in the index. Health physicists may be appalled by the absence of a clear nuclear safety culture at Chinon and Marcoule in those days, but there as elsewhere, later times, not recorded here, brought drastic changes.

With its emphasis on social and political issues, the book may have little to offer to the practicing health physicist. To the historically inclined reader, it provides a study in contrasts to the contemporary developments of nuclear industries in other countries at that time. It is unfortunate that the story was not carried forward to more recent times when the French nuclear industry became a major player on the global scene.

The book includes about 100 pages of notes and references. ☒