(As published in The Oak Ridger's Historically Speaking column on October 24, 2016)

Much of the information in this Historically Speaking series comes from the presentation made to celebrate 40 years of success of the Radiation Emergency Assistance Center / Training Site program recently held at the Oak Ridge Associated Universities Pollard Technology Conference Center. Other information comes from ORAU's web site and interviews with individuals who recall the history of one of the most significant programs in Oak Ridge history.

In the second article in the series I will introduce retired Senior Department of Energy official Bill Bibb's insights into how REAC/TS came to be. I will also give you some insight into the founders of the REAC/TS program and allow you to know the caliber of individuals who have spent their careers at ORAU providing unique services to the nation and the world regarding radiation accident emergency response.

First let's look at a most significant and historic program. In 1976, the Radiation Emergency Assistance Center / Training Site was officially established as a radiation accident management facility for emergency treatment and acute patient care following a major radiation exposure.

Recently this excellent program, managed by Oak Ridge Associated Universities, celebrated 40 years of success at the ORAU Pollard Technology Conference Center. It was good to see the pride in faces of those who were asked to recall their personal connection to REAC/TS over the years.

REAC/TS also included research on human radiation sensitivity as a mission element. Accident victim histories were also a part of the original mission. Within the first year REAC/TS offered its first two courses on the medical management of radiation accidents, training 39 individuals.

In 1977 more than 100 more physicians, health physicists and emergency response personnel participated in three courses on managing response to radiation accidents. In 1978 assistance was provided in 26 radiation related incidents. The new program was having substantial and broad impact in the new field of radiation emergency response and the American Medical Association approved REAC/TS courses for physicians.

In 1979 REAC/TS hosted its first International Conference on Medical Basis for Radiation-Accident Preparedness. In 1980 registry systems were expanded and the new program began to be a force for knowledge and experience in radiation accidents.

Over the next few years, proceedings were published from the first international conference, REAC/TS participated in several emergency preparedness drills and provided onsite assistance following a contamination incident at a hospital in the Caribbean.

Assistance was provided to the Mexican government and medical community of Juarez, Mexico, where over 200 citizens were potentially contaminated with exposure to Cobalt-60. By 1984, REAC/TS was becoming THE go-to organization for response to radiation incidents worldwide.

In 1986, REAC/TS was tasked by the Department of Energy and Department of State to provide assistance to embassy personnel in U.S. facilities in European countries nearest to the Chernobyl reactor accident in Russia. This support also included whole-body counting services to U.S. citizens in the Soviet Union and nearby countries.

1987 saw REAC/TS consulting with Brazil following an accident where 244 people were exposed to radioactive cesium-137. And in 1988 a second international conference was held.

See the growth of significance of REAC/TS on the world stage?

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In 1990, Dr. Bob Ricks, REAC/TS Director, was invited by the International Atomic Energy Agency and the Russian government to be one of four internationally recognized experts to speak at a series of three conferences to evaluate the effectiveness of steps taken in response to the Chernobyl accident.

In 1992, the Cytogenetic program began using the technique of chromosome painting to identify damage caused by radiation, a method resulting from the DOE's human genome program. Again, substantial progress in the area of radiation emergency response capability.

REAC/TS continued to expand capabilities into the support of nuclear nonproliferation activities, NASA's use of plutonium-238 as fuel for the Cassini deep space probe. Train-the-trainer nuclear accident training became in partnership with Boston University School of Medicine resulted in first responders from 15 countries being equipped to respond to radiation accidents. Huge strides taken to expand the capabilities of many others to do what previously was limited to a few specialized groups.

By 2000, more than 4,800 individuals from 48 states and more than 50 foreign countries had taken REAC/TS training courses. REAC/TS had become THE premier training program for radiation accident emergency response training. As a result of the terrorist attack of September 11, 2001, REAC/TS was asked to enhance overall planning for U.S. response to nuclear terrorism.

In 2007, REAC/TS re-established the Cytogenetic Biodosimetry Laboratory as an international response resource for assessing radiation doses for person exposed to ionizing radiation.

In 2011, REAC/TS received requests for assistance related to the flooding and resulting damage to the Fukushima Daiichi Nuclear Power Plant. Training was conducted in Japan as a part of the U.S. response to the catastrophic nuclear crisis there.

An online collaborative chromosome analysis platform spanning four continents demonstrated in 2013 a method that would prove invaluable during mass radiation exposure events because it allowed must faster processing of data. In 2014, yet another exercise demonstrated that rapid response teams operating mobile uranium and mobile plutonium facilities could operate effectively in extremely cold weather.

REAC/TS has some involvement via training, response or both training and response in 39 different locations worldwide! Now, is this not something amazing that exists right here in Oak Ridge and the staff goes daily about their business which has worldwide impact and we local citizens may not even be aware of the renown attached to REAC/TS by countries benefiting from their expertise. Another example of what astounding scientific accomplishments come from Oak Ridge! We should all be proud of REAC/TS!

Since 1976, more than 9,000 professionals have traveled to REAC/TS from all over the world to receive highly specialized radiation emergency medicine education. ASTOUNDING! REAC/TS has conducted onsite training in 34 countries teaching international professionals to manage the radiation incidents and accidents in their own countries. EVEN MORE ASTOUNDING! See how Oak Ridge impacts the ENTIRE world?

REAC/TS staff has for 40 years been on call 24 hours a day and seven days a week to provide medical management or consultation for thousands of calls for assistance involving radiation exposure all over the world. Yes, I was pleased to be present when ORAU celebrated 40 years of EXCELLENCE in radiation emergency medicine.

The most valuable aspect of the REAC/TS creation and growth in influence over the years may well be the fact that it is not the sole agent capable of responding to radiation emergencies, rather through consistent and continuing training provided worldwide it has equipped others to do that for themselves.

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Directors of REAC/TS over the years have been: Dr. C. C. Lushbaugh (1976 – 1977); Dr. Karl Hubner (1977 – 1982); Dr. Robert Ricks (1982 – 2005); Dr. Albert Wiley (2005 – 2015); and Dr. Nicholas Dainiak (2015 – present).

There was also a tour of the REAC/TS facility located at the Methodist Medical Center after the 40 years of success celebration at the Pollard Technology Center. Those going on the tour were shown the medical treatment capabilities available to treat radiation emergencies at the facility as well as how deployment to other locations is facilitated. The state-of-the-art equipment and supplies show the extent that REAC/TS is prepared and ready to respond to any radiation emergencies.

Next I will share with you the decision to create REAC/TS as recalled by Bill Bibb, retired senior executive of the Department of Energy and give insight into the founders of REAC/TS.



Roger Cloutier speaks while Jack Beck and Jim Berger listen as the three of them participated in a panel of founders of REAC/TS at the celebration of 40 years of success

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Roger Cloutier talks with Dr. Albert Wiley, past director of REAC/TS



Wayne Baxter is giving the tour of the REAC/TS facility