

Radiation Exercise 2013

By Dr. Bruce Akers, NCDA&CS

“Nuclear energy is one of the cleanest fuel sources, accounting for 70 percent of all emission-free electricity generated and emitting no carbon dioxide, sulfur dioxide or nitrogen oxide,” according to Duke Energy. The United States derives about 20 percent of its energy from this source. Though nuclear is listed as clean energy by the US EPA and each plant is built to meet high standards, there is potential risk to the facility. The system and structure can suffer damage as the result of



w e a t h e r

events, inten-

Exercise participants practice taking samples.

tional attack or operator error. The events at the Fukushima Plant in Japan stunned experts and the public as we all watched in horror at the sequence of events from a massive earthquake which triggered a devastating tsunami. The world witnessed unimaginable events as the disaster unfolded through the media. The earthquake, tsunami and the salt water breach of the containment vessel at the Daiichi Nuclear Plant brought a sense of urgency to re-evaluating the way we respond to radiological events and the need to improve plans, policies, equipment and training. The events in Japan are providing lessons for all levels of emergency planners.

Continued on page 5.

In This Issue:

- **Radiation Exercise 2013 (page 1 and 5)**
- **Emerging Avian Influenza (page 2 and 6)**
- **Public Health Preparedness Summit (page 3)**
- **VRC Member Spotlight (page 4)**
- **2013 Emergency Management Conference (page 6)**

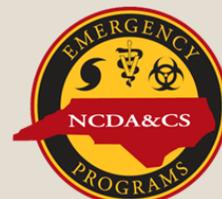


NORTH CAROLINA DEPARTMENT OF AGRICULTURE & CONSUMER SERVICES

Emergency Programs Division

Steve Troxler, Commissioner

Sharron Stewart, Director



Emerging Avian Influenza in China

By Dr. Sarah Mason, NCDA&CS

A new threat to human health has emerged in China recently, once again related to an avian influenza. A new avian flu is circulating in poultry populations in southeastern China and is infecting humans with serious consequences. This new form of flu is known as H7N9, based on the type of hemagglutinin and neuraminidase molecules on its surface. In 2003, wild waterfowl in China appeared to be the source for the then new H5N1 highly pathogenic avian flu. It caused high mortality in migratory birds, then became adapted to domestic poultry, and later began to infect humans. Those infected with H5N1 still experience an approximately 60 percent mortality rate. In addition the virus is fatal for poultry in its highly pathogenic form, sometimes within 12 hours of infection. Poultry may become infected with a low pathogenic variety and show few clinical signs, but the virus has a propensity to mutate into a highly pathogenic form, with high mortality.

The emerging avian flu H7N9 holds a special threat for humans due to its ability to exist in poultry populations in a low pathogenic or non-pathogenic form. Domestic poultry believed to be the source for some 131 human infections and 36 deaths so far have shown no signs of illness. These numbers are changing daily. The virus may silently infect poultry flocks and produce undetected reservoirs of disease. Though surveillance is taking place throughout the world for H5 and H7 type flu cases, outbreaks are still discovered primarily based upon its effect on the health of poultry flocks. With little or no pathology evident in poultry, H7N9 is particularly troubling in its ability to infect humans with little warning. Scientists around the world are actively working to characterize the new virus and gauge its ability to cause a pandemic. At this point, experts agree that the virus genome shows some adaptations that allow it to infect mammals. Currently there is no evidence of human-to-human spread of the virus, though researchers know that influenza viruses typically mutate freely. There is a fear that the virus could change to allow transmission between people to occur.



Continued on page 6.

VRC COORDINATOR	UPCOMING EVENTS:	REQUIREMENTS FOR VRC DEPLOYMENT
<p>Mandy Tolson, DVM Southeastern Region Emergency Programs Veterinarian (252) 813-0989 Mandy.Tolson@ncagr.gov</p>	<ul style="list-style-type: none">• Please see our website for future training and activities.• Check out our sheltering webinars now posted on the website!	<ul style="list-style-type: none">• ICS 100, 200, and 700• Biosecurity/PPE Training• Knowledge of NC Emergency Management• Knowledge of Emergency Support Functions• Attendance at VRC Meetings• Sign a Code of Conduct
<p>COMPLETE YOUR VRC REGISTRATION AT WWW.SERVNC.ORG</p>		

Public Health Preparedness Summit

By Dr. Anna Allen, NCDA&CS

The 2013 Public Health Preparedness Summit was held in Atlanta, Ga., March 12 -15. The goal of the Summit was to provide current, innovative and practical tools and information to enhance the ability of the participants to prepare for, respond to, and recover from, disasters and emergencies involving public health. Attendees hailed from federal, state and local level government agencies as well as private industry and non-profit organizations. Research posters featured current, innovative information on public health preparedness, response and recovery topics. Continuing education credits were available for a wide variety of professionals. Each day began with an opening session for all attendees and included topics such as the community response to the theater shootings in Aurora, Colo., and hospital evacuations in New York City during Hurricane Sandy.



After the opening sessions, the days were packed with interactive sessions and workshops. At any given time, there were at least 10 session options on topics such as public health preparedness and climate change, increasing disaster resiliency in communities, partnership building between public health, healthcare and emergency management, food defense, psychological first aid, use of social media, and integration and management of volunteer resources. Most of the sessions and workshops were very interactive; moderators and presenters encouraged questions, discussion and suggestions. It was a challenge to decide which presentations to attend each day as there were so many exciting choices! Several individuals from North Carolina attended the Summit as participants and speakers. Overall, it was a fantastic opportunity to gain new knowledge and skills to help North Carolina continue to be a leader in preparedness!

VRC MISSION: Train and prepare professionals in the animal care community to respond to disaster events (all hazards) that affect both production and companion animals. Our members will serve as a resource for our state and the nation.

NOTES: To see recent news and updates, please visit the VRC website at www.ncvrc.org. If you have questions about the VRC or would like to offer suggestions or articles for future newsletters, contact Mandy at mandy.tolson@ncagr.gov.

VRC Member Spotlight

Dr. Marty Stebbins



The first time I heard about foot and mouth disease was in a skit by a well-known comedian. It mentioned the mass euthanasia of a cattle herd by shooting and burying them. I laughed at the story when I was a child. It did not seem funny when, in my second year of vet school, I saw a film that demonstrated the effects of FMD. Shortly after class, I sat in the library and watched our school's dairy herd explore a ladder that someone had left out. Imagining having to euthanize the individuals that I knew (the famous Sweetpea being one) gave me pause. As a veterinary professor, I listened to a veterinarian

summarize his work assisting Great Britain's veterinary corps in stopping the 2001 FMD outbreak. The grief he experienced that year was palpable. He was still suffering from the effects of euthanizing thousands of beautiful newborn lambs, knowing he was also destroying the farmers' main source of income.

As veterinarians we pledge an oath to preserve human and animal health and their well-being. It is not in our nature to passively watch animals suffering. It is also not in the nature of your average member of the Veterinary Response Corps to stand aside when disaster hits. So I have a confession to make: I have never been in the field as a veterinarian during a disaster or during its clean-up. I have partaken in table exercises. But table exercises, though critical in training teams, do not prepare you for what you experience in the midst of a deployment. And this leads to my primary occupation today.

These days most of my work is still as an epidemiologist, but my focus is on the spiritual health of the community to which I have been called to serve. As an Episcopal priest, I lead Christian worship and help people with their personal prayer lives. But I also walk with people as they experience crises in their lives. Sometimes I get to use my veterinary training as they experience the death of a pet or the loss of a valued production animal. But I also serve our veterinary community by listening to your stories. The general public normally does not understand the depth of our passion to serve and assist both animals and humans. This means that they do not always understand the level of our grief when we have to euthanize large numbers of animals; when we are physically overwhelmed by the amount of veterinary care needed in a disaster; or when we are helping people who have lost everything. Much of our training as VRC members is about the technical aspects of our jobs, but we cannot fully train for the psychological and spiritual burdens of disasters. Part of the role of the VRC is creating a community where we can share those burdens with one another by listening and being compassionate to each other. And so I am proud to be a fellow member of the North Carolina VRC.

Radiation Exercise 2013

Continued from page 1

North Carolina has four nuclear power plants. One is for research and 3 others supply a significant amount of the state's electrical power. Additionally, our state is in close proximity to plants in adjacent states. North Carolina holds mandated preparedness exercises every two years. The exercises are performed at the plants on a specific schedule and in collaboration with state and local emergency response agencies. Local jurisdictions that are located in the planning zone surrounding the plants are engaged in response to events.



Recently, the state conducted a mandated exercise at the Shearon Harris Nuclear Power Plant in Wake County. The exercise, lasting two days, involved the ingestion pathway zone, which extends about 50 miles in radius around a plant. One of the primary concerns within this zone is the ingestion of food and liquid that is contaminated by radioactivity. The exercise tested immediate response to mitigate the event at the plant and protect the public in close proximity to the plant. Federal, State and local agencies, as well as volunteers, were involved in actively planning and executing this exercise for more than six months.

Food safety is a priority assessment following a nuclear event. During this extended exercise, responders deployed sampling teams consisting of radiation protection personnel and agriculture responders to field settings to assess the extent of contamination and affects on food commodities, including dairy. The N.C. Department of Agriculture and Consumer Services deployed technical experts to the NC Emergency Operations Center as advisors and decision makers.

The Shearon Harris Nuclear Power Plant exercise provided the opportunity for department personnel to form a multiple disciplinary team to train, respond and make decisions with the state's emergency management staff in a rapidly developing scenario. Exercises conducted with emergency responders on local, regional and state levels allow us to evaluate our preparedness level for a real event. North Carolina's food, fiber and forestry industries create a \$77 billion global impact and drive the state's economy. NCDA&CS has a mandate and daily mission to protect consumers, which is taken seriously by our employees.

Emerging Avian Influenza in China

Continued from page 2

Scientists at the University of Wisconsin have examined the genome sequences of virus samples from markets selling live birds in several areas of China where humans have been infected. They have analyzed materials from pigeons, chickens, domestic ducks and the environment. Analysis so far suggests that the virus is entirely from avian ancestry. This is different from H5N1 which contains genes of swine and avian origin.

Researchers are beginning to focus on producing a vaccine in response to the human infections with this virus. The outbreak is developing quickly, and there has been insufficient time to develop a seed strain of the virus as a base for production. Historically, vaccines based on influenzas of the H7 type have been poorly immunogenic, showing little protection in recipients. Scientists fear that production of an effective vaccine could be difficult for this reason. The Centers for Disease Control in Atlanta will be working toward solving any problems encountered in vaccine development through their Influenza branch.

Though we cannot know if the future will include a global pandemic of H7N9 avian influenza virus, we can be sure that steps are being taken to prevent one. Because of the years of advances in response to H5N1 virus outbreaks, scientists are aware of the potential outcome of avian influenza infection in both poultry and humans. Mechanisms are in place to research the virus and work toward production of effective vaccines. The difficulties caused by H5N1 outbreaks in poultry and humans may lead to new and more effective answers to H7N9 infection.



2013 Emergency Management Conference

By Dr. Mandy Tolson, NCDA&CS



North Carolina Emergency Management held their spring conference at Sunset Beach from March 10-15, 2013. This well-attended conference had a variety of engaging topics that included talks from many emergency management partners. The agenda included topics involving agriculture, public health, active shooter response, dealing with media on the scene, social media, volunteer organizations, search and rescue, nuclear response and other hot topics.

It is refreshing to see so many emergency responders and emergency management professionals coming together to share ideas and information. This also serves as a vital time to renew working relationships.