

## Radiological Preparedness in Wake County (and Some History)

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At a high school on Rock Quarry Road on Tuesday evening, August 25, emergency responders and public health and environmental workers prepared to receive people evacuated from southeastern Wake County, after an accidental release of radiation at the Harris Nuclear Plant. That is, a simulated evacuation after a simulation accident. Relax, this is only a test.

The exercise was one of several conducted that week within Wake, Chatham, Harnett, and Lee counties. Called "Harris Out of Sequence," the activities were "response components" that were tested individually (out of sequence) instead of "all at once" (as they would unfold during an actual emergency).

Wake County Emergency Management coordinated the exercises, which are required every two years by the Federal Emergency Management Agency (FEMA). Their evaluators were present, along with officials from North Carolina Emergency Management.



In Wake County, four activities were conducted:

- Demonstrate capability to activate and operate an evacuation shelter (called a Reception and Congregate Care Center) in southeast Raleigh, to evaluate, decontaminate, and shelter civilians. This was conducted with Raleigh Fire, Raleigh Police, Wake County Human Services, Wake County Environmental Services, and Red Cross.
- Demonstrate capability to operate an Emergency Worker Decontamination station at the PNC Arena in Raleigh. This was conducted with the Raleigh Fire Department's haz-mat team, with Haz-Mat 1 (staffed by Engine 2), Haz-Mat 2 (staffed by Engine 27), Haz-Mat 3 (staffed by Engine 8), Haz-Mat 4 (staffed by Ladder 5), Battalion 3, and Car 55.<sup>1</sup>
- Demonstrate capability to warn and clear boaters from Harris Lake. This was conducted with the Wake County Sheriff's Office.
- Review procedures with school officials in Holly Springs, on how they would either shelter in place or evacuate in the event of an accident during school hours.<sup>2</sup>

<sup>1</sup>That's Raleigh's entire compliment of haz-mat resources, save one. Haz-Mat 5, not present, is a major spill and foam support unit also staffed by Engine 2. It operates a former rescue unit, a 2002 International/SVI medium-duty rescue. It's paired with a two-axle foam trailer delivered in 2012 and built by the local Combat Support Products. Raleigh also operates North Carolina Hazardous Materials Regional Response Team (RRT) #4. When deployed, it typically responds with Haz-Mat 2, Haz-Mat 3, Haz-Mat 4, and Cary 55.

<sup>2</sup>Due to the size of the potentially affected areas in southeast Wake County, Apex, Holly Springs, and Fuquay-Varina are demonstrated on a six-year rotation cycle. For 2015, Holly Springs was evaluated. The other two municipalities, though not evaluated, also participated in training and exercises.

## Photos From The First Two

Photographer Mike Legeros attended as an observer to the first two events, which were held at Southeast Raleigh Magnet High School and the parking lot of the PNC arena. [See his pictures.](#)



## Questions and Answers

He also conversed with Wake County Emergency Management Specialist (and third generation former firefighter!) Leslie B. O'Connor about the drills:

Q: What's the total capacity for evacuees in Wake County?

A: Including our overflow shelters, 30,302 can be sheltered using only our schools. That doesn't include any shelters sponsored by outside organizations (non-Wake County) during an actual event.

Q: How many people can be sheltered at Southeast Raleigh Magnet High School, where Tuesday's exercise was conducted?

A: The capacity is 1,204, as housed in the main and auxiliary gymnasiums.

Q: How long is the shelter period, in hours or days?

A: A shelter would be open for a period of days for a large scale disaster where citizens need to be relocated. For smaller scale events, a reception center would be opened for a short term or hourly need, to provide a location for citizens seeking refuge.

Q: When people arrive at the shelter, they're checked for radiation contamination. Walk me through what happens.

A: There are "portal monitors" at the entrance, similar to metal detectors at airports, which detect contamination levels. They scan for radioactive particles present on a person's body, clothing, and shoes. If no radiation is detected, the person is designated as "clean" and directed to a gymnasium for sheltering.

If radiation is detected, they're escorted to a health information station. They can ask questions and receive information about the decontamination process. From there, they go to the decontamination station. Men and women are decontaminated separately in men's and women's locker rooms. There are exceptions for small children, however. If a mother arrives with a young son, the son may enter the women's locker room for decontamination and vice versa.

Handheld radiation meters are used to verify the contamination. Decontamination is completed using a graduating system: clothing removal, use of baby wipes, and shower if necessary. If showering is required, the person will receive disposable clothing until more appropriate clothing is procured. Once cleared, they're directed to the gymnasium.

Q: Are men and women sheltered separately?

A: No. All are sheltered in the same gymnasium.

Q: Decon is also provided for responders. Tell me about that.

A: Unlike civilians, who are sheltered after evacuating their homes or businesses, responders (fire, police, EMS, etc.) need to return to service. Thus we have a separate monitoring and decontamination station for them and their vehicles. In addition to personally screening each individual—in the same manner as evacuees—each responder vehicle receives a careful inspection. Vehicles with contamination are moved to a decon area, where they're cleaned using Maslin cloths and/or soap and water.

Q: What happens if they someone can't be decontaminated?

A: After at least three attempts at decon, evacuees or responders with contamination levels higher than 300 CPM are transported to Rex Hospital or WakeMed Raleigh.

Both hospitals participate in annual Medical Services Drill, or MS-1. Each year, we test our plans to identify, perform "gross decon," transport, and perform "hospital decon" of patients. We also keep equipment at WakeMed satellite hospitals in the county, for overflow purposes.

Q: FEMA evaluates these exercises. North Carolina Emergency Management is also present. But who funds these activities?

A: Duke Energy funds all Radiological Emergency Preparedness (REP) activities in Wake County. No monies are received at the state or federal level.

Q: They also fund the other three counties, correct?

A: Yes, Wake, Chatham, Harnett, and Lee counties comprise the Emergency Planning Zone (EPZ) for the Harris plant. The same funding is also provided to the EPZ counties at other Duke Energy nuclear plants in North and South Carolina. Funding is provided based on the population impacted by the plant. Duke Energy also provides funding to NCEM, for REP planning.

Q: How big is the EPZ?

A: Ten-mile radius around the plant. Within the EPZ, immediate protective actions for the public would include go inside and stay inside, sheltering in place, or evacuation. There's also a fifty-mile zone, in which state and federal officials may monitor for food products, livestock, and water contamination, after a radiological accident.

Q: Throw some numbers at me, about all this.

A: Our 2014 Evacuation Time Estimate (ETE) Population Update Analysis indicates that Wake County has a population planning base of 114,928 (both permanent and transient visitors). FEMA's REP standard advises we must "plan for a sufficient number of congregate care centers ... to accommodate a minimum of 20 percent of the EPZ population" and "demonstrate the capability to attain and sustain, within about 12 hours, a monitoring productivity rate per hour needed to monitor the 20 percent EPZ population planning base". Based on our ETE for 114,928 population planning base, our 20% is 22,985. We have enough equipment in Wake County to monitor 30,528 evacuees and 4,608 emergency workers in 12 hours.

Q: Meaning the equipment and facilities can be equipped and operational within twelve hours of a radiological accident?

A: Correct.

Q: Tell me about Wake County Emergency Management and their role in Harris plant planning?

A: We have two full-time positions for Harris preparedness. Darshan Patel manages the overall Wake County REP Plan and Standard Operating Procedures. I manage the implementation of the plans and procedures through equipment maintenance and first responder training. Wake County EM has eight members total, additionally the Director and Assistant Director, a Haz-Mat Preparedness specialist, an Office Manager, and a Software Developer.

Q: What's the historical perspective of your department?

A: You tell me!

## **History of Wake County Emergency Management**

The first full-time emergency management position in Wake County was created in the 1950s, when retired Colonel David L. Hardee took oath as Raleigh-Wake County Civil Defense Director on February 15, 1954. He was a highly decorated combat veteran of both world wars and was charge with "preparing [for civilian defense of] one of the state's six targets for nuclear attack. His office was originally located in the basement of the county courthouse, the third in the county's history that stood from 1915 to 1967.<sup>3</sup>

His office also oversaw preparation for natural disasters, and facilitation the creation and administration of a rural fire department program. (The latter is the reason that Civil Defense stickers—or even blue and white paint schemes—appeared on local fire and rescue vehicles. It denoted that funding was contributed by Civil Defense programs.)

In February 1960, he was replaced by Colonel John C. Thorne. The Wake County Office of Civil Defense was later renamed the office of Civil Preparedness, then Emergency Preparedness, then Emergency Management. (It was also named Major Response and Logistics for a short period between EP and EM.)

In 1971, Russell Capps was named Director of Emergency Preparedness. He also held the position of county Fire Marshal and, beginning in July 1976, he also became the first EMS Director with the creation of a county Emergency Medical Services service that year. He resigned in early 1986.

Wake County Emergency Management still has plans for "nuclear attack," but focuses most of its resources on preparedness for a wider range of more likely incidents including hazardous materials releases, nuclear plant emergencies, public health emergencies, and natural disasters.

<sup>3</sup>Was there a part-time position prior to the full-time position created in 1954? Perhaps. After the United States entered World War II in December 1941, civilian preparedness planning was undertaken in Raleigh, including air raid and blackout drills. Unsure if those were led at the city/county level, or by a state official.

### From 1975 to 2015

From county budget documents as primary source:

FY75-76	Three salaried positions, Director, Trainee, Steno II. The last two are noted as "state", likely state-funded. Budget is \$10,271.75, which includes \$20M from state and \$10M from city. Director's salary is \$13,728.
1976, summer	Wake County Emergency Medical services created. Emergency Preparedness Director also becomes EMS Director.
1978	Construction started on the first of four nuclear reactors at Shearon Harris, in January 1978. The other three reaction projects are cancelled in December 1981 and December 1983.
FY80-81	Department still named as Raleigh-Wake Office of Emergency Preparedness.
FY81-82	Department now named Emergency Management.
FY82-83	Three full-time positions. Unchanged since FY75. Budget of \$75,550 offset by \$38,500 of state revenues. "Responsibilities of this office include: preparing and keeping up-to-date emergency plans for dealing with natural or man-made disasters, including enemy attack; installation and maintenance of a warning system through air raid sirens, emergency broadcast radio system, and multiple radio communications systems; and maintaining the best resources for responding to and protecting Wake County citizens from disaster and the effects of disaster."
FY83-84	Capital Improvement Programs includes Emergency Operations Center in lower level of the courthouse. Project started 1981, completed 1983. Performance data includes 2,000 hours estimated for "Planning, Research, Plans Development," 416 hours for "Training, Education, Public Relations", 208 hours for "Exercises, Responses, Maintenance," and 1,650 hours for "Administration."
FY86-87	Three full-time positions. Unchanged since FY75. Annual budget is \$95,807, offset by \$23,952 from state.
1986, early	First full-time Fire Marshal position created.
1987	Shearon Harris Nuclear Power Plant achieves criticality in January and begins producing commercial power on May 2, 1987.
FY87-88	Fourth full-time position added. Operations Officer, "to continue to provide support for the Shearon Harris emergency response program as well as other emergency response programs."
FY88-89	Full time positions increased to six. Plus 0.2 part-time equivalent.
FY89-90	Performance data includes goals of 70% "of chemical holders identified and inventoried," 1,500 "emergency responders trained" and 210 "emergency responses."
FY90-91	Performance data includes goals of 85% of "facilities risk assessments for hazardous waste (Title III SARA) completed, 100% of "transportation arteries risk assessment completed," 80% of "facilities prep-planning for hazardous waste completed (Title III SARA)", 4,500 "responders completing emergency management courses."

FY91-92	Actual expenditures include seven full-time and 1.2 part-time positions.
FY93-94	Full-time positions increased to eight plus one 0.2 part-time. (Fire Services has 11.5 positions, EMS has 97 full-time and seven part-time positions.) Performance goals include six "community-based emergency response training and exercises conducted." Emergency responses from January 1 to December 31, 1992, are categorized as Haz-Mat/Transportation (49%), Haz-Mat/Fixed Facility (39%), fire (6%), other (6%). Staff spent on responses: 436. Number of responses: 190. Total training courses in 1992 were 152 with 4,458 students.
FY94-95	Budget \$732,576.
FY95-95	Public Safety Division created. Jimmie B. Holland, former Asst. County Manager, hired as first director. Emergency Management reports to office, along with fire, EMS, and CCBI.
July 1, 2007	By this time, CCBI no longer part of Public Safety Division.
2008	Public Safety Director position removed, and division reorganized.
2009	Fire Services and Emergency Management divisions are merged. Department of Fire and Emergency Management. Director is Ray Echevarria, previously Fire Rescue Director.
FY14-15	Five full-time positions. Expenditure budget is \$668,124.
July 1, 2014	Emergency Management is separated from Fire Services division.

Sources include [this blog post](#) on History of Wake County Fire Service Governance (and More).

### Wake County Major Incidents

Here's a VERY short sampling of major incidents that have occurred over the years and decades in Wake County. [See this blog post](#) for a longer list that includes major, Major, and MAJOR incidents. (How to differentiate between the three? Readers can debate that.)

August 12, 1974	Passenger train derailment in Wake Forest. Twenty-eight of 270 passengers injured.
June 30, 1977	Mass patient incident at Royal Villa Hotel in Raleigh. As many as 200 people become sick at a conference.
September 28, 1980	Rex Hospital relocated, with 168 patients transported.
February 19, 1988	Commuter plane crashes at airport. Twelve killed.
November 28, 1988	Tornado strikes Raleigh and northern Wake County. Destroyed 425 residences and 78 businesses. Two killed and 102 injured.
December 13, 1994	Commuter plane crashes in Morrisville. Fifteen killed.
April 15, 1996	Tornado strikes Zebulon.
September 5-6, 1996	Hurricane Fran.
January 19, 2005	Ice storm with city-wide gridlock. Shelters opened for stranded commuters.
September 2005	Hundreds of evacuees from Hurricane Katrina are brought to Raleigh, and housed at a victim center at the fairgrounds.
November 10, 2005	Barn fire in Fuquay-Varina burned over 10,000 round hay bales, three structures, and multiple vehicles and equipment. Over forty fire departments on scene for three days.
October 5, 2006	Major haz-mat incident including fire and explosions. Hazardous waste facility in Apex.
February 22, 2007	Major fire in Raleigh. Townhouse community, 27 destroyed, 11 damaged, 72 people displaced.
June 9, 2009	Industrial plant explosion, fire, collapse, and mass-patient incident in Garner.
February 13, 2010	Mass-patient incident at Raleigh Sheraton. Approximately 150 people evaluated, about 30 treated, and five transported.
April 16, 2011	Tornado strikes Raleigh and northeastern Wake County. Destroyed 146 structures and heavily damaged 719

others. Four people killed.

### More Information

- Google finds all sorts of goodies on the subject of nuclear plant preparedness, such as this [NEI fact sheet about emergency preparedness at nuclear energy facilities](#).
- Also visit [Wake County Emergency Management](#) on the web.

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