September 23, 1985

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

In the Matter of	)	
	)	
CAROLINA POWER & LIGHT COMPANY	)	
and NORTH CAROLINA EASTERN	)	Docket No. 50-400 OL
MUNICIPAL POWER AGENCY	)	
	)	
(Shearon Harris Nuclear Power Plant)	)	
	)	

APPLICANTS' TESTIMONY OF DANA B. MACKONIS AND KENNETH A. MATHIAS ON USE OF DRUG DETECTION DOGS (CCNC CONTENTION WB-3)

JOINT TESTIMONY
OF
DANA B. MACKONIS AND KENNETH A. MATHIAS

Q1. Will you please state your name, your address, present occupation and employer?

A1. Mackonis:

My name is Dana B. Mackonis. Both my home and my business address is 5501 Welkin Court, Durham, North Carolina 27713. I own and operate Canine Detection Services and Companion Dog School which are sole proprietorships. I am also an employee of Northern Telecom at its business location in Research Triangle Park, North Carolina. My work with Northern Telecom involves computer systems analysis and design.

Mathias:

My name is Kenneth A. Mathias. I am a police officer with the Raleigh Police Department in Raleigh, North Carolina. My home address is 6509 Orchard Knoll Road, Apex, North Carolina 27502.

Q2. Will you briefly describe your educational and professional background?

A2. Mackonis:

I am a 1971 graduate of the University of Connecticut at Storrs from which I received a BA degree in English. I also have a certificate in Business Programming from the Computer Processing Institute in Bridgeport, Connecticut.

In connection with my background in training and handling dogs and my Canine Detection Services business, I have been raising and training Belgian Tervuren dogs for over 14 years and have been actively working in obedience competition for dogs for over 12 years. I have taught training classes, both group and private lessons, and presently hold such classes under the name of Companion Dog School. I have been working dogs in Schutzhund (protection work) for approximately 10 years. I am a member of various breed and obedience clubs and

have served as an officer and board member in each of these clubs. I work closely with Garry Lapham, a professional dog trainer in Fayetteville, North Carolina, who operates a business known as Sentinel K-9, in the proper procedures and techniques of training drug detection dogs. I have attended numerous seminars and classes on detector dogs. Both myself and one of the dogs I use have received certificates of completion in drug detection classes.

Mathias:

I am a 1978 graduate of the University of Maryland at College Park with a Bachelor of Science degree in Industrial Hygiene. I am also a graduate of the University of Southern California (Eastern Regional Campus in Virginia) with a Masters of Science in System Safety Engineering.

My law enforcement education and professional experiences include:

- 1978 Graduate of Prince Georges County (Maryland) Police Academy (graduating 4th in a class of 60).
- 1978 recipient of University of Maryland Rookie Police Officer of the Year award.
- 1980 Graduate of Raleigh (NC) Police Academy (graduating 2nd in my class).
- 1982 Raleigh Police Officer of the Year.
- September 1982 - Raleigh Police Officer of the Month (Rotary Club award).
- 1983 Graduate of Baltimore (Maryland) Police K-9 Training Academy (14-week K-9 trainers' course).
- 1983 Graduate of Baltimore Police K-9 Training Academy - Scent Discrimination Course, including

1) Narcotics Detection

2) Explosives Detection

- Attended United States Police Canine Association (USPCA) trainers seminars.
- Conducted USPCA, Region 2, Seminar, 1984 - Raleigh, NC, and conducted Region 2 training on bi-monthly basis, 1983 to present.
- Started K-9 unit in the Raleigh Police Department.
- Consultant to many Police Departments concerning set-up of Police K-9 units.
- Founder and President of Region 2 of USPCA (covering NC, SC and southern VA).
- Currently working on minimum K-9 standards with Attorney General's Office.
- Have provided police dog candidates for Police Departments throughout the United States.
- I have recovered illegally possessed drugs through use of Police K-9 dogs "Juno" and "Phantom" resulting in arrests and convictions of suspects. Every court case I have participated in involving use of detector dogs has resulted in a conviction.

Q3. What is the purpose of your joint testimony?

A3. The purpose of our testimony is to discuss and explain the capabilities, utilization and training of dogs to locate and ferret out controlled substances ("drugs") and our experiences in working our narcotics detection dogs at CP&L's Shearon Harris Nuclear Power Plant. Finally, we will express an opinion, based on

our experiences, as to the contention that there is widespread drug use at the Harris site.

Q4. How many years of experience in handling dogs do you have?

A4. Mackonis: Fourteen and one-half years with dogs generally; 2½ years with narcotics detection dogs.

Mathias: Four years as a police officer. Five years prior to that as a civilian in AKC shows. A total of nine years.

Q5. Of those years, how many have you had in police dog and narcotics detection dog work?

A5. Mackonis: Three and one-half years with police dogs and, as set out above, 2½ years with narcotics detection dogs.

Mathias: Four years.

Q6. How many narcotics detection dogs have you trained?

A6. Mackonis: Three.

Mathias: Five.

Q7. Would you generally describe the training that your narcotics detection dogs undergo?

A7. The detection principle is based on the olfactory ability of the dog and his desire to retrieve. In training a narcotics detection team (dog and handler), the searching exercise must always be made to appear to be a game and therefore fun for the dog with the dog most always "winning" the game. This develops the dog's confidence and encourages the dog to work for the praise of the handler.

Basic materials needed for training are State and Federal permits to possess drugs for training (Drug Enforcement Agency Permit #222), fresh drugs, a variety of containers and hiding places, a dog between the age of twelve and thirty-six months (this is the optimum age range to start the training of a dog, but

a dog can work for many years beyond that age) with the desire to retrieve, and a handler with the desire and patience to develop a productive team.

The olfactory ability of the dog, along with his intelligence and willingness to work for an intangible reward, are the dog's most desirable traits. The techniques of narcotics detection are different from the methods used in tracking, which most people are probably familiar with. The spirit of the chase, present in a tracking exercise, is not a stimulus that a narcotics detection dog will have. Also, unlike the tracking dog, a drug dog does not cast about for a scent and then follow it to the objective. Instead, the dog must search in a prescribed manner, not following a scent, but attempting to pick up a scent. The task is demanding, tedious, and often boring since the dog may often work for long periods without detecting a scent he is trained to detect.

Training initially starts with the handler having the dog retrieve a small canvas bag filled with a particular drug - normally marijuana as the first drug. The handler allows the dog to smell the bag and then tosses the bag in plain view of the dog for his retrieval. The handler then engages in a tug-of-war with the dog over his "find" for the purpose of building up a tremendous interest by the dog in the bag and, consequently, in the odor of the drug. The idea again is to make the exercise truly fun for the dog.

Eventually, with the aid of another person, the bag is hidden in a rather obvious place while the dog remains seated. Then the dog is commanded to find or fetch the bag. Each retrieval is rewarded with a tug-of-war over the bag which creates the incentive for the dog to repeat the exercise over and over.

Once the dog is able to search for and locate the bag, the areas involved, the type and size of the containers the bag is placed in, and the hiding places and conditions are expanded and changed. Each time the dog has a series of successful

finds, then additional difficulty is introduced into the training. Changing the kinds of areas and amount of drugs increases the dog's interest. Other drugs are introduced into the training program. Special care is taken to wrap the drugs so as not to allow the dog to break open the container and be exposed to ingesting the drugs. However, different drugs are not mixed in any one bag. You start a dog on one drug only and then build up to other drugs. The exercises are repeated over and over again until the dog learns to locate and retrieve any article containing the scent. Such training is continued and increased in difficulty to develop the dog's ability and interest so he will search tirelessly and enthusiastically to locate particular scents. Records are kept by the trainer as to the training and the results.

The training of a dog usually takes a period of approximately 14 weeks. A longer period is equired before a handler and a dog become a highly effective team. Various elements are introduced into the training such as advanced search patterns, vehicle searches, masking agents which create a foreign odor (such as perfume, gasoline or formaldehyde), artificial distractors that might confuse a dog, and theories of scent as related to narcotics detection. Most trained dogs learn to totally disregard artificial distractors and develop an amazing aptitude for detecting drugs even though concerted efforts may be made to hide the drug scent from the dog.

The drug detection reliability of a well-trained dog is in excess of 95 percent.

Q8. How many types of controlled substances ("drugs") are the dogs you used at the Harris site trained to find?

A8. Mackonis: Four.

Mathias: Five.

Q9. What are these types of drugs?

A9. Mackonis: Marijuana/hashish; cocaine; heroin; and methaqualone.

Mathias: Marijuana/hashish, methaqualone, methampetamine, heroin, cocaine, phenmetrazine

Q10. Please describe generally your search patterns with the narcotics detection dog when used at the Harris site?

A10. During each of our searches at the Harris site, we were directed by CP&L's Construction Security Unit personnel to the areas we were to conduct controlled searches with our dogs on leash. Considerable areas at the site were covered during each search.

Q11. What types of responses or reactions does a narcotics detection dog give upon finding a controlled substance?

A11. There are basic responses: 1) aggressive -- which is the way our dogs were trained; and, when an aggressive response dog has an indication he will bark, scratch, dig or bite at the area; 2) passive -- where the dog will sit at an area.

Q12. Have you ever had a dog alert in an area and not find any drugs in that area?

A12. Mackonis: Yes. Residual odors of a controlled substance or materials may cause an odor to linger for various periods of time depending on how porous the material is that came into contact with the substance.

Mathias: Yes. Residual amounts are present from prior contact of that area with a controlled substance. Although they (molecules) are invisible to the human eye they are very much "visible" to the well-developed olfactory system of the trained dog.

Q13. Have your dogs ever indicated or made a find at the Shearon Harris Nuclear Power Plant site?

A13. Mackonis: Yes.

Mathias: Yes.

Q14. What type of drugs were found?

A14. Mackonis: Marijuana.

Mathias: Marijuana and cocaine (see my answer A21. below).

Q15. Have you had occasion to utilize your dogs for searches at other construction or industrial sites or similar type areas for narcotics?

A15. Mackonis: Yes.

Mathias: Yes. Construction sites in the line of duty.

Q16. Did your dogs give any indications or finds at these other sites?

A16. Mackonis: Yes.

Mathias: Yes.

Q17. How do you maintain the proficiency of a narcotics detection dog?

A17. By working the dog several times a week.

Q18. Ms. Mackonis, when were you or your Canine Detection Services first retained by CP&L to do searches at the SHNPP site?

A18. My first search was conducted February 25, 1985, on the basis of a written Memorandum of Understanding, dated February 19, 1985. A more formal contract was entered into between CP&L and my business, which contract is dated July 1, 1985.

Q19. Ms. Mackonis, how is Ken Mathias connected with your business?

A19. He is a subcontractor.

Q20. Give the dates, general time of day and length of search involved for each of your searches, and any finds or indications of drugs.

A20. Mackonis:

My first search lasted approximately 4-5 hours as did all my subsequent searches and commenced at varying times ranging from 4:00 a.m. to 9:00 p.m. As previously stated, the search areas were indicated to me each time by personnel from CP&L's Construction Security Unit. At that time and at all times hereinafter mentioned I was accompanied by a CP&L representative and a Daniel International Company representative.

My first search for CP&L at the SHNPP site was done on February 25, 1985. As a result of this search, a pipe with marijuana residue was found in a locked toolbox in a gangbox in front of the Diesel Generator Building. No other drugs were found.

On February 28, 1985, a search was conducted by me in various areas at the site. The dog alerted on several items, i.e. codeine, and caffeine pills, which were subsequently determined to be legally possessed on site.

On March 19, 1985, a search was conducted by me in various areas at the site. The search had negative results.

On March 28, 1985, a search was conducted by me in various areas at the site. The search had negative results.

On April 5, 1985, a search was conducted by me in various areas at the site. The search had negative results.

On May 9, 1985, a search was made by me in various areas at the site. The search had negative results.

On June 13, 1985, a search was made by me in various areas at the site. The search had negative results.

On June 26, 1985, a search was made by me in various areas at the site. A plastic bag containing a small amount of marijuana was found in a toilet room in

the Common Building (Room A372). The bag had been rolled up and placed in a pipe which was protruding from the wall. Otherwise, the search had negative results.

On July 11, 1985, a search was made by me in various areas at the site. The dog had a strong reaction to a locker in the Service Building which locker was searched with negative results. Otherwise, the search had negative results.

On July 30, 1985, a search was made by me in various areas at the site involving the Administration Building and a parking lot. Five vehicles were identified by the dog as possibly containing drugs. I was subsequently informed by CP&L that the vehicle owners were identified and the vehicles were searched with the following results: marijuana seeds and ashes were found in the ashtray of one car; a small marijuana roach (a marijuana cigarette butt) was found in another vehicle; an employee refused for his vehicle to be searched; a small roach was found in another vehicle; and the fifth vehicle was searched with negative results.

On August 8, 1985, a search was made by me which concentrated entirely in employees' parking lots. Eleven vehicles were identified by the dog as possibly containing drugs. I was subsequently informed by CP&L that all eleven vehicles were searched with the exception of one whose owner refused to permit a search and that the ten vehicles searched had negative results. There is reason for me to believe that false indications may arise if a vehicle parks over an area where an ashtray containing traces of marijuana ashes has been emptied. Likewise, if a roach was disposed of on the ground, the dog will give a positive indication. One roach on the ground was found by the dog during that search.

On August 30, 1985, a search was made by me in various areas at the site. A plastic bag containing a minute amount of marijuana seeds was found inside a pipe in the Reactor Auxiliary Building. Otherwise, the search had negative results.

On September 17, 1985, a search was made by me in various areas at the site. The search had negative results.

During each of these searches, controlled tests were conducted using a controlled substance which was hidden by CP&L's Construction Security Unit personnel without my knowledge as to its location and the dog was successful each time in making a find of the drug.

Mathias:

I made two searches with my dog at the Harris site on behalf of Canine Detection Services. The searches were made on May 23, 1985 and on May 31, 1985, at various hours with each search lasting several hours. The areas searched were indicated to me by CP&L's Construction Security Unit personnel. With the exception of controlled substances found by my dog as a result of his being tested by CP&L's Construction Security Unit personnel, the results were negative.

Q21. Based upon your training, background and experience in handling narcotics detection dogs and your work at the Harris site on behalf of CP&L as indicated above, do you have an opinion as to the contention that there is widespread drug use at the Harris site? State your reasoning for any opinion.

A21. Mackonis: Yes, I have an opinion. I do not feel that there is widespread drug use at the Harris site. This opinion is derived from my work at the Harris plant as set out above and is based on the few finds that we have made and the minuscule amounts of drugs that we have found there, and the confidence that I have in my dogs' drug detection capabilities.

Mathias: Yes. My opinion is that there is not widespread drug use at the SHNPP site. This opinion is based solely upon the two searches I conducted at the site. My dog made indications only on the drugs hidden by CP&L security personnel. He searched large areas and made no indications as to controlled substances. If drugs

were used on a widespread basis as alleged then they would have been present in some of the areas searched. Based upon the dog's abilities and his lack of indications, I do not feel that there is an on-site drug problem.