UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

Before the Atomic Safety and Licensing Board

In the Matter of LONG ISLAND LIGHTING COMPANY (Shoreham Nuclear Power Station, Unit 1)	Docket No. 50-322-OL-3 (Emergency Planning)

DIRECT TESTIMONY OF DEPUTY
CHIEF INSPECTOR RICHARD C. ROBERTS
ON BEHALF OF SUFFOLK COUNTY REGARDING
LILCO'S PROFFERED EVIDENCE OF JANUARY 11

Q. Please state your name, occupation and professional background.

A. My name is Richard C. Roberts. I am a Deputy Chief Inspector assigned to the Office of the Chief of District, County of Suffolk Police Department. A statement of my qualifications and experience, as well as a description of the structure of the Suffolk County Police Department, was included in the testimony sponsored by me and other officers of the Suffolk County Police Department on behalf of Suffolk County regarding Contention 65 (Evacuation Time Estimates), which was admitted into evidence by the Board. (Tr. 2260).

Q. What is the purpose of this testimony.

A. The purpose of this testimony is to address LILCO's proffered evidence of January 11, 1985 concerning its proposed

use of the Nassau Veterans Memorial Coliseum ("Nassau Coliseum") to monitor and decontaminate evacuees in the event of an emergency at the Shoreham plant.

Q. Are you familiar with the evidence proffered by LILCO?

A. Yes. I have reviewed LILCO's evidence and am familiar with its contents. Among other things, LILCO's evidence reveals that the Nassau Coliseum is located in south-central Nassau County, approximately 43 miles from the Shoreham plant and 33 miles from the westernmost boundary of the 10-mile EPZ. According to LILCO, "all evacuees will be directed to go to the Coliseum" for monitoring and decontamination. See letter dated October 23, 1984, from Matthew C. Cordaro, Vice President, Long Island Lighting Company, to Frank M. Rasbury, Executive Director, Nassau County Chapter, American Red Cross.

Q. What is your opinion regarding LILCO's proposed use of the Nassau Coliseum?

A. Given the heavy traffic congestion which must be expected during an emergency at Shoreham and the distance of the Nassau Coliseum from the Shoreham EPZ, evacuees would likely experience substantial delays in attempting to reach the Coliseum. See generally Suffolk County's testimony regarding Contention 65 (Evacuation Time Estimates). Indeed, in my opinion, LILCO's proposal to direct all evacuees to the Coliseum, an area where the roads are heavily congested even under normal, day-to-day conditions, would result in heavy traffic congestion not only within the EPZ, but also between the EPZ and the Coliseum.

Q. Can you quantify the amount of time it is likely to take for evacuees to reach the Nassau Coliseum?

A. Yes. Previous testimony has addressed LILCO's time estimates in Appendix A of the Plan for evacuating the EPZ. For the reasons set forth in Suffolk County's testimony regarding Contention 65, those times should be much higher than estimated by LILCO. Here, I will focus just on the time required to reach the Coliseum after the EPZ has been evacuated. See generally NUREG 0654, Section II.J.12 (capability must exist to monitor evacuees within about a 12-hour period).

In my opinion, the excessive distance of the Nassau Coliseum from the EPZ, as well as the extremely congested traffic conditions that will exist as a result of evacuation of the population from both inside and outside the EPZ, will lead to substantial delays for evacuees attempting to reach the Nassau Coliseum. This is true whether they are travelling in their personal vehicles or in LILCO-operated buses. In order to illustrate this point, the Suffolk County Police Department has compiled time/distance data for travel between LILCO's proposed bus transfer points[1/] and the Nassau Coliseum.

1/ For an explanation of LILCO's bus transfer points and their functions, see generally Suffolk County's testimony on Contention 67 (Evacuation of Persons Without Access to Automobiles).

During January 14 through January 18, 1985, the Suffolk County Police Department assigned an officer to drive an unmarked police car between the LILCO bus transfer points and the Nassau Coliseum. The distance between each transfer point, from where evacuees without access to automobiles or other private vehicles will be bussed to the Nassau Coliseum, and the Coliseum was recorded in both miles and required travel time. Only the more major east-west roadways within Suffolk County were driven.2/ In Nassau County, the Meadowbrook State Parkway and/or Glen Cove Road were used to arrive at the Coliseum, which is located on Hempstead Turnpike. The results are listed in Attachment 1 to this testimony. It should be noted that all the data in Attachment 1 were obtained on weekdays between 9:30 a.m. and 3:00 p.m. None was obtained during peak rush hour traffic or periods of inclement weather. Data collected were obtained for actual travel between the bus transfer points and the Nassau Coliseum only. Therefore, the listed times do not reflect the amount of time that would be required, for example, for evacuees and their belongings to be transferred from a bus bringing them to the transfer point and another bus taking them to the Coliseum.

2/ The roadways driven were the following:

NY Route 347 (Nesconset Highway)
NY Route 25 (Jericho Turnpike)
NY Route 495 (Long Island Expressway)
NY Route 27 (Sunrise Highway)
NY Route 27A (Montauk-Merrick Road)
Northern State Parkway
Southern State Parkway.

The procedure utilized to gather the data set forth in Attachment 1, i.e., driving from LILCO's bus transfer points to the Nassau Coliseum, was decided upon in order to have definite beginning and end points for the routes travelled. Obviously, this would not be possible for all evacuation traffic, since persons with access to private vehicles would evacuate the EPZ and attempt to reach the Nassau Coliseum from locations throughout, and indeed beyond, the EPZ's boundaries. However, while the results in Attachment 1 more specifically apply to the time required for LILCO-operated buses to travel to the Nassau Coliseum, these data are also illustrative of the time required for private vehicles to reach the same destination since, in many instances, LILCO's buses and private vehicles will be following the same routes once the EPZ is evacuated.[3/] Moreover, it is important to bear in mind that, since the data set forth in Attachment 1 do not reflect the heavy traffic congestion expected during a Shoreham emergency or inclement weather, they represent an unrealistically low minimum daytime travel time required between LILCO's transfer points and the Nassau Coliseum. Actual times during an emergency would obviously be much higher.

For example, the data on page 1 of Attachment 1 show it would take approximately 14 minutes for a bus to reach the intersection of Routes 112 and 25 from the transfer point at

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3/ It should be noted that buses, unlike passenger vehicles, are prohibited from using the parkways on Long Island. Thus, highways such as the Northern State Parkway and the Southern State Parkway would not be available to LILCO's buses.

Brookhaven National Laboratory. From that intersection, it would take at least another 1 hour and 18 minutes to reach the Nassau Coliseum, for a total travel time of 1 hour and 32 minutes. Evacuees bussed from the Riverhead transfer point at NY Route 25 and Doctors Path would require as long as 1 hour and 54 minutes to reach the Coliseum (40 minutes to reach the intersection of NY Routes 112 and 27A and an additional 1 hour and 14 minutes to reach the Coliseum taking NY Route 27A to the Meadowbrook State Parkway and then the Hempstead Turnpike). Similarly long travel times would be necessary for bussing evacuees from LILCO's other transfer points. In almost all instances, evacuees would be required to travel an hour or more (after having been bussed from their homes to the transfer points), to reach the Coliseum.

Q. What are the traffic conditions that evacuees are likely to encounter enroute to the Nassau Coliseum?

A. Evacuees are likely to encounter heavy traffic congestion on their way to the Coliseum. The extent of the congestion will, of course, depend on the time of day and the routes chosen to reach the Coliseum. With respect to buses, to my knowledge the LILCO Plan nowhere specifies the routes buses would drive from the transfer points to the Coliseum, and due to lack of discovery, I was unable to gain any information regarding LILCO's proposed or designated bus routes. Without such information, it is impossible to predict precisely the traffic conditions that would be encountered by LILCO's buses from the transfer points to the Coliseum.

If, however, a Shoreham emergency were to occur during the morning rush hour, significant delays in travel times would be likely, irrespective of the routes selected by evacuees or by LILCO for its buses. Traffic along all highways and most other routes leading west toward the Coliseum is heavily congested during the morning rush hour (6:30 a.m. to 9:30 a.m.). Traffic along the Long Island Expressway (NY Route 495), the Southern State Parkway, the Northern State Parkway, Jericho Turnpike (NY Route 25), NY Route 347 (Nesconset Highway), NY Route 27A (Montauk-Merrick Road), and the Sunrise Highway (NY Route 27) is frequently stopped altogether. Therefore, evacuees attempting to travel to the Nassau Coliseum would be significantly impacted, and substantial delays in reaching the Coliseum would be likely. Certainly, during an emergency at Shoreham, actual travel times would likely be hours longer than the travel times reflected in Attachment 1.

Furthermore, even if an emergency at Shoreham were to occur at times other than when traffic is normally heavy (i.e., peak rush hour) traffic congestion both inside and outside the EPZ would be caused by the mere declaration of an emergency at Shoreham, for the reasons discussed in Suffolk County's testimony regarding Contention 65 (Evacuation Time Estimates) and Contention 27 (Mobilization of Emergency Response Personnel).

Such congestion would raise travel times for all evacuees substantially above the times reported in Attachment 1.[4/]

It is also important to note that neither LILCO's Plan nor its proffered evidence offers any indication that LILCO will provide the means, such as traffic guides, fuel trucks, tow trucks, etc., to expedite traffic movement along the major routes to the Nassau Coliseum. This lack of planning will certainly add to the delays which will be encountered by evacuees attempting to reach the Coliseum. See generally Suffolk County's testimony on Contention 66.

Another problem that will extend the time necessary to reach the Nassau Coliseum is the parking capacity of the Coliseum. The parking capacity at that location is approximately 6,000 vehicles. However, given the number of vehicles that would be directed to the Coliseum in the event of a full-scale Shoreham emergency and the need to keep space available for contaminated vehicles that would have to be decontaminated, it must be concluded that the Coliseum's parking capacity would be insufficient.

For the reasons stated above, I would expect traffic queues to form from the area of the Coliseum back toward the EPZ. Based upon my experience and knowledge of the Nassau Coliseum

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4/ Furthermore, with respect to LILCO's proposal to bus evacuees without access to automobiles to the Nassau Coliseum, it must be kept in mind that by the time evacuees could be bussed to LILCO's transfer points, traffic both inside and outside the EPZ would be heavily congested by evacuees travelling in personal vehicles. See Suffolk County's testimony regarding Contention 65.

area roadways, which are heavily congested even under normal conditions, I would expect such queues to be significant, possibly leading to congested traffic all the way from the EPZ to the Coliseum.

Q. Does that conclude your testimony?

A. Yes.

TIME - MILEAGE CHART

TO: ROUTE 112 WESTBOUND ACCESS POINTS

FROM EPZ TRANSFER POINTS	ROUTE 112 & 25	ROUTE 112 & 495	ROUTE 112 & 27	ROUTE 112 & 27A
1. Brookhaven National Laboratory William Floyd Parkway	:14 9.9	:13 8.4	:14 13.0	:22 13.9
2. LILCO Brookhaven Substation Weeks Avenue, N/of L.I.E.		:12 12.1	:13 12.2	:20 13.1
3. LILCO North Patchogue Substation Medford Avenue & Shaber Road[1/]	:07 4.4	:02 1.1	:05 2.0	:08 2.9
4. N. Bellport Restaurant Bellport Avenue & Route 27	:15 9.7	:10 6.4	:03 3.3	:06 4.2
5. Brookhaven Fire Department[2/] Route 27A & South Country Road		:14 9.1	:07 6.0	:08 5.1
6. LILCO Eastport Substation Route 27A & Eastport Manor Road		:17 16.3	:15 15.7	:27 16.0

LEGEND:
NSP - Northern State
SSP - Southern State
MSP - Meadowbrook State
CR 97 - Nichols Road
GC Rd.- Glen Cove Road
H/T - Hempstead Turnpike

1/ Approximate time/distance data; actual times and distances from Route 112 & Greenport Avenue in North Patchogue, located approximately one mile from the North Patchogue Substation.

2/ LILCO has used the Brookhaven Fire Department in drills as a substitute location for the Shirley Mall, which LILCO expects will be the actual transfer point in a Shoreham emergency. Time/distance data are not available for the Shirley Mall; however, the times and distances set forth here are reasonable approximations.

TIME - MILEAGE CHART

FROM EPZ TRANSFER POINTS	TO: ROUTE 112 WESTBOUND ACCESS POINTS				
	ROUTE 112 & 347	ROUTE 112 & 25	ROUTE 112 & 495	ROUTE 112 & 27	ROUTE 112 & 27A
7. Shopping Center Miller Place Road & 25A	:05 3.4	:10 5.3	:15 8.6		
8. LILCO Property Norwood Avenue & 347	*:02w 0.6w	*:08 6.9	*:11 9.9		
9. Middle Island Shopping Center Middle Island/Yaphank Rd. & 25		:05 3.3	:10 6.6	:17 9.7	
10. Plaza Shopping Center Route 112 & 25, Coram		:00 0.0	:05 3.3	:12 6.4	
11. Warehouse - Riverhead Doctors Path & 25		:30 19.8	:22 20.9	:28 23.9	:40 24.7

* NORWOOD AVENUE LOCATION IS WEST OF ROUTE 112 ON ROUTE 347
DISTANCE FROM NORWOOD TO ROUTES 25 & 495 VIA NICHOLL's ROAD (CR 97)

TIME - MILEAGE CHART

FROM 112 ROUTES	TO NASSAU COLISEUM	TIME	MILEAGE
a. Route 347 & 112	347 to NSP to MSP to H/T	:54	40.0
b. Route 25 & 112	25 to Glen Cove Road to H/T	1:18	39.5
c. Route 495 & 112	495 to Glen Cove Road to H/T	:52	41.5
	495 to NSP to MSP to H/T	:49	41.5
d. Route 27 & 112	27 to MSP to H/T	:55	36.5
	27 to SSP to MSP to H/T	:40	35.2
e. Route 27A & 112	27A to MSP to H/T	1:14	38.7
	27A to 27 to MSP to H/T	1:00	37.6
	27A to 27 to SSP to MSP to H/T	:46	36.4