

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

'84 APR -2 AIO :4

OFFICE OF SECRETARY
DOCKETING & SERVICE
BRANCHBefore the Atomic Safety and Licensing Board

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

LILCO TESTIMONY ON CONTENTION 15 (CREDIBILITY)PURPOSE

Suffolk County's survey (by Social Data Analysts) and LILCO's (by Yankelovich) show that both LILCO's and Suffolk County's "credibility" with the public, at the time the polls were taken, was low. Contention 15 alleges that because of this lack of credibility, members of the public would not believe LILCO and would not take the protective actions recommended by LILCO in an emergency. The various subparts of the contention allege certain people in particular who would not believe LILCO:

- A. People in support organizations such as the Red Cross, DOE, ambulance, fire, rescue organizations, local law enforcement agencies, and the U.S. Coast Guard;
- B. Members of the public advised to shelter;
- C. School authorities;

DS03

- D. Motorists directed by traffic guides or security personnel;
- E. Members of the public listening to the EBS messages;
- F. People contacting the rumor control point; and
- G. People reading the emergency planning brochure and other public education materials in advance of an emergency.

In addition, 15.D, involving the traffic guides and security personnel, adds the ideas (1) that heightened fears and anxiety will make the credibility problem worse and (2) that people will view LILCO's employees with "hostility and suspicion."

This testimony shows that Contention 15 is wrong, for the following reasons. First, since no individual or organization can be counted on always to have high credibility or to have high credibility with all segments of the public, low credibility, while certainly undesirable, is less important than the design of the emergency information system. LILCO has taken great pains to design an information system that will be believed. In particular, the sources most trusted about nuclear energy are "scientists," the NRC, and the Department of Energy. The LILCO emergency information system takes into account the fact that these people and agencies are participating in the emergency response.

Second, it is important to distinguish between organizations and people with roles in those organizations. That people do not trust a "utility" or "the local government" does not

mean that they will not follow the directions of a scientist from the utility or government about matters within the scientist's expertise. Everyday experience shows that this is so, for people in Suffolk County routinely turn to LILCO for advice on gas and electric matters. In an emergency, certainly in the early stages, LERO (including DOE) would be perceived as the organization having expertise in nuclear energy and as having the best, first-hand information about the emergency.

LILCO, March 30, 1984

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

Before the Atomic Safety and Licensing Board

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

LILCO TESTIMONY ON CONTENTION 15 (CREDIBILITY)

I. IDENTIFICATION OF WITNESSES

1. Q. Please state your name and business address.

A. [Barnett] My name is Steve Barnett. My address is Planmetrics, Inc., 34th Floor, 666 Fifth Avenue, New York, New York, 10103.

[Clawson] My name is Carol A. Clawson. My address is Long Island Lighting Company, 250 Old Country Road, Mineola, New York, 11501.

[Cordaro] My name is Matthew C. Cordaro. My address is Long Island Lighting Company, 175 East Old Country Road, Hicksville, New York, 11801.

[Mileti] My name is Dennis S. Mileti. My address is Department of Sociology, Colorado State University, Fort Collins, Colorado, 80523

[Robinson] My name is Elaine D. Robinson. My address is Long Island Lighting Company, 100 East Old Country Road, Hicksville, New York, 11801.

[Sorensen] My name is John H. Sorensen; my address is Oak Ridge National Laboratory, Building 4500 North, Room H-11C, P.O. Box X, Oak Ridge, Tennessee, 37830.

[Weismantle] My name is John A. Weismantle. My address is Long Island Lighting Company, 100 East Old Country Road, Hicksville, New York, 11801.

2. Q. Please state your professional qualifications.

A. [Barnett] I am a cultural anthropologist and Vice President of the Cultural Analysis Group at Planmetrics, Inc. I have studied public perceptions of electric utilities and energy issues, including those reported in a study for the Department of Energy called Public Perceptions of Future Electric Supply, Utility Financial Conditions, and Related Issues, DOE/PE/70009-1 (Nov. 1982).

[Clawson] I am the Associate Director of Public Affairs for LILCO. As a member of the Local Emergency Response Implementing Organization (LERIO), I am responsible for the public information brochure. I have also had years of experience as a reporter and in dealing with the press as an information source, both the national press in Washington, D.C. and local press in various parts of the country.

[Cordaro] I am Vice President of Engineering for LILCO. I am on this witness panel to provide the LILCO management perspective on emergency planning and to answer any questions pertinent to management. My role in emergency planning for Shoreham is to ensure that the needs and requirements of emergency planning are being provided and that the technical direction and content of emergency planning are being conveyed to corporate management. I accomplish this by supervising the development and implementation of the offsite emergency response plan for Shoreham; the Manager of the Local Emergency Response Implementing Organization (LERIO) reports directly to me.

[Mileti]. I am Associate Professor of Sociology and the Director of the Hazards Assessment

Laboratory at Colorado State University. My specialty is the study of human behavior in disasters, both natural and manmade.

[Robinson] I head the External Organizations Division of LERIO. In my capacity as Manager of the External Organizations Division of LERIO, I have supervised much of the emergency planning for special facilities.

[Sorensen] I am a Research Staff Scientist with the Resource Analysis Group, Energy Division, Oak Ridge National Laboratory. My familiarity with the issues surrounding credibility in emergency planning stems from my knowledge of the theoretical and empirical literature in the emergency behavior area and from my own research. In particular, I have done studies for the NRC on the Three Mile Island accident.

[Weismantle] I am employed by LILCO as Manager of the Local Emergency Response Implementing Organization (LERIO). I am responsible for developing and implementing the offsite emergency response plan for Shoreham.

[All witnesses] A more complete statement of professional qualifications for each of us is being separately offered into evidence as part of the document entitled "Professional Qualifications of LILCO Witnesses."

II. THE CONTENTION

3. Q. What does Contention 15 say?

A. Contention 15, with its "preamble," reads as follows:

Preamble to Contention 15. The LILCO Plan is dependent upon LILCO/LERO personnel providing essentially all necessary information and recommendations which are required during an emergency. Contention 15 addresses the question whether LILCO/LERO recommendations for protective actions (and other information provided by LILCO/LERO) will be believed and followed or whether LILCO will be distrusted as a source of information with the result that its protective action recommendations (and other information provided) will not be believed or followed by the public.

Contention 15. Intervenors contend that LILCO is not considered by the public to be a credible source of information. More than 60 percent of the people in Suffolk County would not trust LILCO officials at all to tell the truth about an accident. See Social Data Analysts Survey. Persons are more likely to question, refuse to believe, disobey or ignore orders, recommendations, or information that come from persons whom they do not believe than that from authorities they trust and consider credible.

Because the public does not perceive LILCO as a credible source of information, protective action recommendations and other information disseminated by LILCO in an emergency will not be followed or believed by the public. Further, LILCO may be viewed hostilely as the source of a problem in the first place, or skeptically because the public will perceive that it is not in LILCO's financial interest to disclose all pertinent information. (Members of the public will perceive that LILCO will not disclose the seriousness of an accident due to fears of lower ratings in the financial markets, NRC sanctions, or a lower public image than already exists.) Therefore, people will be likely to disregard or disobey protective action recommendations or other emergency instructions disseminated by LILCO during an emergency. Intervenors thus contend that the LILCO Plan cannot and will not be implemented, and accordingly, there can be no finding of compliance with 10 CFR Section 50.47. The paragraphs which follow set forth the particular aspects of, or operations contemplated by, the LILCO Plan which cannot be implemented as a result of LILCO's lack of credibility, and the resulting lack of regulatory compliance.

The subparts of Contention are not separately admitted but rather are treated as reasons in support of the "main" contention:

Contention 15.A. LILCO employees are assigned the responsibility of command and control over (a) the personnel in the support organizations relied upon in the Plan for emergency response services (ARC, DOE-RAP, ambulance, fire, rescue organizations, local law enforcement agencies, and the U.S. Coast Guard). (OPIP 2.1.1; Plan at 2.2-1, 2.2-2, 2.2-4, 4.2-1.) Intervenors allege that such individuals will share the public perception that LILCO is not a credible source

of information. Therefore, it is likely that orders from the LILCO employees in command and control will not be obeyed by the non-LILCO emergency workers relied upon in the Plan. Accordingly, there is no assurance that the portions of the LILCO Plan involving participation of non-LILCO personnel can or will be implemented, and there can be no finding of compliance with 10 CFR Section 50.47(a)(1). The likelihood that non-LILCO workers will not obey LILCO command and control orders means that the following aspects of the LILCO Plan cannot and will not be implemented:

(1) Offsite accident and dose assessment and projection, and recommendations to the LILCO Director of LERO as to what particular protective actions should be recommended to the public, resulting in noncompliance with 10 CFR Sections 50.47(b)(9), 50.47(b)(10), 50.47(c)(2) and NUREG 0654 Sections II.I, J.9 and J.10.

(2) The protective action of evacuation resulting in noncompliance with 10 CFR Sections 50.47(b)(10) and NUREG 0654 Sections II.J.9 and J.10.

(3) Staffing of relocation centers, and the provision of necessary services for evacuees, resulting in noncompliance with 10 CFR Sections 50.47(b)(8), 50.47(b)(10), and NUREG 0654 Sections II.J.10 and II.J.12.

Contention 15.B. A protective action recommendation of sheltering could not or would not be implemented. Based on a survey of Long Island residents, a substantial number of the people advised to shelter will choose to evacuate instead as a result of their lack of trust in LILCO's interest or ability to properly and objectively determine and recommend actions that are in the best interests of the public. Thus, the protective action of sheltering could not and would not be implemented in violation of 10 CFR

Sections 50.47(a)(1), 50.47(b)(10) and NUREG 0654 Sections II.J.9 and J.10.

Contention 15.C. The LILCO Plan provides for early dismissal, sheltering or evacuation/relocation of students in schools within or near the EPZ, depending on the nature and circumstances of an accident at Shoreham. If protective actions are recommended for the public in the EPZ, schools outside the EPZ having children who reside in the EPZ are expected to retain such children at the schools after the end of the school day. (See Appendix A, at II-19 through 20). However, under the LILCO Plan, the decision to implement an early dismissal or to shelter, evacuate, relocate or retain students rests with the schools. (See Appendix A, at II-19). The recommendation to dismiss early or to implement any other protective actions will be made, by LILCO, over the EBS radio (Plan at 3.3-4 through 3.6-6; Appendix A at II-19). The school authorities, being members of the public, are likely to share the perception that LILCO is not a credible source of information. Therefore, they may not believe, or follow, the information or recommendations provided to them by LILCO. As a result, there is no assurance that any protective actions for school children (including sheltering, evacuation, relocation, retaining children after school hours, or early dismissal to permit sheltering or evacuation with parents) can or will be implemented, and there can be no finding of compliance with 10 CFR Sections 50.47(a)(1) or 50.47(b)(10) and NUREG 0654 Sections II.J.9 and J.10.

Contention 15.D. Assuming that the traffic control measures specified in the LILCO Plan are not prohibited by law (see Contentions 1-4), LILCO's traffic guides will be disobeyed by motorists, as a result of LILCO's lack of credibility. Similarly, LILCO personnel assigned to perform security functions under the LILCO Plan (i.e., performing law

enforcement functions at the EOC, relocation centers, and at the EPZ perimeter), again assuming they are not prohibited from performing such functions, are unlikely to be trusted or obeyed by the public [as a] result of LILCO's lack of credibility. In addition, since the emergency will emanate from an incident at LILCO's own facility, the public will be likely to hold LILCO and its personnel responsible for the emergency, which will cause LILCO's employees to be viewed with hostility and suspicion, and will increase the likelihood that orders from LILCO employees will be ignored or disobeyed. As a result, there can be no finding of compliance with 10 CFR Part 50, Appendix E Section IV.A. and NUREG 0654 Section II.J.8 and Appendix 4, because LILCO's evacuation time estimates are unrealistically low (being based on the assumption that all evacuees will follow the evacuation routes and instructions prescribed by LILCO). The Plan also fails to comply with 10 CFR Sections 50.47(a)(1) and 50.47(b)(10) and NUREG 0654 Sections II.J.9 and J.10 because there is no assurance that the protective action of evacuation can or will be implemented or that there will be adequate security during an emergency. In addition, the lack of effective perimeter control will result in persons' entering the EPZ, and being exposed to radiation, and impeding evacuation from the EPZ.

Contention 15.E. The sample messages for EBS broadcasting which are contained in the Plan (OPIP 3.8.1) identify a LILCO employee (Director of LERO) as the source of the information and the protective action recommendation. Since the public does not consider LILCO to be a credible source of information or advice, instructions from a LILCO employee will not be obeyed. Therefore, these messages will not accomplish their intended purpose of providing clear instruction to the public and there is no compliance with 10 CFR Section 50.47(b)(5) and NUREG 0654 Sections E.5, E.6 and E.7.

Contention 15.F. LILCO's proposed rumor control point is to be manned by LILCO employees. (Plan, at 3.8-5). This rumor control effort will be ineffective and will fail to comply with NUREG 0654, Section II.G.4.c, because it relies on LILCO -- a non-credible source of information -- as the authoritative source for squelching, explaining or otherwise controlling rumors. Rumors cannot be effectively controlled if the source of control is itself not credible. Thus, the LILCO Plan does not comply with NUREG 0654, Section II.G.4.c and 10 CFR Sections 50.47(b)(5) and 50.47(b)(7).

Contention 15.G. LILCO proposes to conduct all public education activities designed to inform the public about Shoreham and about actions to be taken in the event of a Shoreham emergency. (See Plan at 3.8-1 through 3.8.4) LILCO's lack of credibility renders LILCO incapable of effectively educating the public on these matters. The public will likely disbelieve, disregard or discount purported educational materials regarding preparations for a radiological emergency at Shoreham, if such materials are received from and/or prepared by LILCO. Thus, the LILCO Plan cannot and does not comply with 10 CFR Section 50.47(b)(7) or NUREG 0654, Sections II.G.1 and 2.

III. THE PUBLIC

A. "Credibility" as Shown by Polls on Long Island

4. Q. The "main" Contention 15 appears to deal with LILCO's credibility with the public. What do Suffolk County's and LILCO's opinion surveys show about LILCO's credibility with the public?

A. [Cordaro, Weismantle] The results are summarized below. In the survey commissioned by Suffolk County, the following percentages of those asked gave the following answers when asked if they would trust the following people "to tell the truth about the accident" at Shoreham:

<u>Suffolk County Survey</u>				
<u>Would you trust the following official?</u>	<u>A great deal</u>	<u>Some- what</u>	<u>Not at all</u>	<u>Don't know</u>
NY Governor	9%	44%	43%	3%
LILCO	8%	28%	62%	2%
NRC	14%	47%	30%	4%
Suffolk County Executive	16%	46%	31%	6%

Social Data Analysts, Inc., Attitudes Towards
Evacuation: Reactions of Long Island Residents to
a Possible Accident at the Shoreham Nuclear Power
Plant, Table 1 (June 1982).

In the survey commissioned by LILCO, the following percentages of respondents said they would rate as "highly believable" statements about nuclear power issues by the following sources:

	<u>Total</u>
<u>Percentage Who Would Rate As</u> <u>Highly Believable Statements</u> <u>About Nuclear Power Issues by:2/</u>	<u>%1/</u>
Civil Defense	51
State health officials	51
The Nuclear Regulatory Commission	44
The Police	41
The Governor	32
TV and radio reporters	30
The Suffolk County Executive	23
LILCO	23

Yankelovich, Skelly and White, Inc., Status Report
on Public Response to Emergency Planning Efforts,
Table 32, p. 63 (July 1983). Both these surveys
were entered into evidence with the testimony on
Contention 23 ("Shadow Phenomenon").

5. Q. How do you explain the differences in results be-
tween the Suffolk County poll and the Yankelovich
poll?

A. [Sorensen] The data in the Suffolk County poll and
in the Yankelovich poll show some differences.
These differences are, however, largely meaning-
less. First, the differences could come about as a

1/ Multiple Responses.

2/ Rated "5" or "6" on a 6-point scale where 1 equals com-
pletely unbelievable and 6 equals completely believable.

result of sampling error, response bias, etc. Second, and more important, the two questions measure different dimensions of the credibility concept. The County poll asks about the personal trust that people have in various entities to "tell the truth." The Yankelovich poll asks about the believability of statements issued by various entities. Thus, in the first case individuals' feelings are tapped, while in the second, perceptions of information are measured.

Another difference between the two surveys concerns the specificity of the issue. One question uses an accident as the reference point, while the other concerns nuclear power issues in general.

The questions also offer different numbers and types of information sources. The County poll has four sources: two are specific roles held by individuals; two are organizations. The Yankelovich poll has eight categories. These include two specific positions, several generic roles (for example, police), and several large organizations.

Finally, the questions use a different metric to measure answers. The County poll employs a three-point scale of trust ("a great deal," "somewhat,"

"not at all"). The Yankelovich poll uses believability in varying degrees in a six-point scale to measure responses.

Differences can be expected on the basis of the dissimilarities between the questions. The rough rank orders of the various sources suggests, at face value, that such differences may not be significant. Assuming, however, that they are (for example, that the County poll shows the County Executive to be more credible than the Yankelovich poll), there is no basis for explaining the differences. This is because we have only two observations, while the questions differ in at least four different ways. Thus it is impossible to determine why the numbers are different.

[Mileti] The Yankelovich poll and the Suffolk County poll do document what some could call "different results." However, this is not surprising, since the two polls asked different questions. To a large extent, the answers one gets to poll questions depend on the way the questions are stated and the answers that people are asked to choose among. The Suffolk County poll, for example, let people choose between trusting "a great deal,"

trusting "somewhat," and so on, whereas the Yankelovich poll asked people to tell if different groups would be "highly believable." Put simply, the use of multiple response categories in the County poll (two representing "truthfulness") versus only one in the Yankelovich poll would be expected to lead to different results. Also, the context in which these questions were asked on their respective questionnaires could have affected how people answered the questions.

6. Q. Are these differences significant?

A. [Mileti] What is significant is not that these polls report different "numbers," but rather that the same conclusion can be reached from both polls: no one person or organization is trusted by everyone, and consequently emergency planning must design an emergency public information system that would elicit belief in the emergency information regardless of pre-emergency "trust" by the public in different groups, people, or organizations.

I might add that any poll or survey that is intended to measure something like the perceived public trust in or credibility of groups, organizations, or people would better achieve reliable results by

using a "battery" (a multiple-entry series) of questions that were validated indicators of "trust," rather than by simply asking one question about trust, which is a somewhat complex concept.

[Sorensen] Overall, I conclude that there is no basis for saying the responses are significantly different or that the differences observed are very meaningful.

7. Q. What do you make of the fact that one of the polls shows LILCO's credibility to be about the same as the Suffolk County Executive's?

A. [Sorensen] What the Yankelovich poll shows is that overall LILCO, an organization, is rated similar to a specific individual within the county government. On one hand, we can explain this by concluding that people tend to distrust both government officials and large utilities. On the other hand, this would be misleading, because organizations do not equal specific people in people's minds. We would expect that specific individuals within any organization would exhibit a range in their perceived credibility, even as differences in credibility among organizations exist. Overall, the inconsistency within the polls over individuals' roles versus

organizations and the failure of the polls to include all relevant sources of information preclude our learning very much from the questions asked. There is no sound basis for concluding that organizations cannot do emergency planning from these data. We can conclude from these data, however, that to increase the credibility of a warning, the message should convey that the information is being scrutinized and validated by different sources and originates from emergency planning experts and other experts.

[Mileti] A review of the data presented in the Suffolk County survey and the Yankelovich survey suggests that no one group, organization, or person asked about was credible for everyone in the studies. The numbers obtained in both polls, I might also point out, would likely change over time as the people and organizations asked about became more or less popular with citizens.

The LILCO poll shows that LILCO and the Suffolk County Executive are "tied" on perceived trust (both show 23%), while the Suffolk County survey shows the County Executive ahead of LILCO. Regardless of which poll is used, they illustrate

(assuming the polls did a good job of measuring "credibility") that large numbers of people do not perceive LILCO or the County Executive as credible.

Who is or is not ahead (or whether they are tied) is quite irrelevant, since in an emergency all citizens, not just the majority, need credible information. If Suffolk County were participating in emergency planning for Shoreham, it would have to take exactly the steps that LILCO is taking to ensure credible emergency public information if and when an emergency ever happened. These steps, by the way, should be taken by emergency planners, be they government or utility, even if the emergency response organization had 100% credibility before an emergency, simply because popularity and credibility can change over time.

B. Credibility of Utilities Generally

8. Q. Is the low credibility suggested by the above polls unique to LILCO?

[Barnett] No. The part of Contention 15 that says "LILCO is not considered by the public to be a credible source of information" suggests that LILCO is distinct in credibility from other utilities

with nuclear plants on-line or under construction, since if LILCO customers resembled customers from those other utilities in nuclear attitudes, then no utility could be expected to develop a reasonable emergency plan. Planmetrics' data suggest that this is not so; nuclear attitudes of LILCO customers appear to be similar to nuclear attitudes across the country. Data on nuclear attitudes collected over the past four years by Planmetrics, Inc., suggest that LILCO falls within the range of utilities throughout the country on customers' nuclear attitudes and is therefore not exceptional in that regard.

Table 1, from a Planmetrics study for the Department of Energy (based on a national probability sample of 1,253 respondents), reveals a general suspicion of the quality of construction in nuclear plants (also, only 22% say that most plants now under construction will be completed), and specifically a clear perception that the utility industry has not been honest about nuclear costs (21% yes, 62% no) or safety (26% yes, 64% no). These figures are similar to the 60% in Suffolk County who do not trust LILCO to tell the truth about a nuclear accident. While the question we used in the DOE survey

is not the same as the one in the Suffolk County survey, in general both sets of figures are similar enough to indicate that LILCO is one of many utilities with a relatively low level of public belief in nuclear statements coming from a utility.

Table 2, from studies performed for other utilities, shows that, for three utilities in the Southwest and Midwest, scientists and the NRC are more trusted than the utilities. The similarity of numbers across these utilities reinforces confidence in the finding and suggests that they can be extended by inference across the United States.

LILCO, when compared to other utilities, seems representative of national public attitudes, which are suspicious regarding nuclear communications.

Looking at nationwide data on attitudes toward utilities is a more realistic approach than simply looking at frequency responses within LILCO's service territory and then concluding that LILCO is uniquely not believable.

9. Q. What accounts for this low credibility?

A. [Barnett] Nuclear credibility of a utility is closely tied to overall favorability or opposition

to nuclear energy. Table 3 suggests that attitudes toward a utility's credibility (here "Utility A" on "Honesty About Nuclear Safety") are strongly correlated with overall opinions of nuclear energy.

Just as concern about radiation and waste sharply increases as opinion of nuclear energy goes from favorable to unfavorable, so also does perception of honesty in nuclear communications decline as respondents become more antinuclear.

10. Q. Are there any research findings specifically on the credibility of information in emergencies?

[Barnett] In anthropologically based group interviews (seven interviews, with seventy-eight participants in North and South Carolina, California, Massachusetts, and Indiana), Planmetrics has observed that:

- There is significant skepticism about nuclear emergency planning, including concerns about family members forced to act separately, traffic problems, extent of the spread of radiation, and so on.

- Interview participants are skeptical of receiving reliable information from any source, including the government, saying things like "How can they know quickly enough" and "They will tell you whatever makes it easier on them."

In general, Planmetrics' anthropological findings indicate that for many industrial sectors (including the chemical and automobile industry), there are strong doubts that those in authority will communicate the truth in problematic situations. For Americans an authority must be able to examine and state "facts." "Facts" is a word which, through a simplified version of the scientific method, has become cultural reality for many Americans. And, especially since Watergate, Americans tend to believe that vested interests override and obscure facts. If the potential authority is believed to have a vested interest, those interests will override the possible facts in that authority's presentation. Therefore, the issue of disbelief raised in Contention 15 is one that holds not only for LILCO and not only for all utilities with nuclear plants on-line or coming on-line, but is a

concern that many Americans feel for other industrial sectors as well.

I conclude that LILCO is not unique among utilities in public perception of nuclear energy and nuclear emergency planning. Therefore, a case cannot be made that people around the Shoreham plant are especially unlikely to follow emergency instructions.

Table 1

NATIONAL NUCLEAR ATTITUDES (NOVEMBER 1982)
FOR THE DEPARTMENT OF ENERGY

- 45% - Favor nuclear
- 35% - Oppose
- 20% - Don't know/depends

Nuclear Power As a Business Decision

- 51% - Good decision
- 3% - Average
- 35% - Bad Decision
- 12% - Don't know

Effect on Electric Bills

- 32% - Higher bills
- 26% - Remain the same
- 34% - Lower bills
- 8% - Don't know

Quality of Construction of Nuclear Plants

- 9% - Excellent
- 27% - Good
- 29% - Fair
- 20% - Poor
- 16% - Don't know

How Many Plants Under Construction Will Be Completed?

- 33% - Most
- 31% - About half
- 18% - Less than half
- 18% - Very few
- 11% - Don't know

Has Utility Industry Been Honest About the Cost of
Nuclear Power?

- 21% - Yes
- 62% - No
- 18% - Don't know

Has Utility Industry Been Honest About Safety?

26% - Yes
64% - No
10% - Don't know

Table 2

PUBLIC TRUST ON NUCLEAR INFORMATION

		<u>Utility A ('83)</u>	<u>Utility B ('83)</u>	<u>Utility C (May '83)</u>	<u>Utility C (Oct. '83)</u>
Scientists from around country	Yes	69%	72%	72%	69%
	Not sure	9%	10%	8%	12%
	No	18%	14%	16%	16%
Scientists from state	Yes	70%	67%	68%	64%
	Not sure	8%	11%	8%	12%
	No	17%	18%	19%	19%
DOE/NRC	Yes	47%	51%	46%	38%
	Not sure	11%	15%	11%	14%
	No	34%	27%	36%	40%
Utility	Yes	42%	48%		31%
	Not sure	10%	16%		9%
	No	46%	34%		54%
Local newspaper	Yes	37%	22%		
	Not sure	8%	12%		
	No	53%	63%		
Local tv news	Yes	40%	31%	29%	28%
	Not sure	10%	14%	8%	8%
	No	42%	52%	61%	61%

Table 3

UTILITY A OPINION OF NUCLEAR ENERGY				
	Very Favorable	Somewhat Favorable	Somewhat Unfavorable	Very Unfavorable
	<u>28%</u>	<u>27%</u>	<u>16%</u>	<u>26%</u>
Customer Concern About Radiation				
Very Concerned	19%	29%	42%	69%
Somewhat Concerned	28%	45%	49%	22%
Not at all Concerned	53%	27%	9%	7%
Customer Concern About Nuclear Waste				
Very Concerned	43%	66%	73%	89%
Somewhat Concerned	36%	29%	24%	4%
Not at all Concerned	21%	5%	3%	4%
Has Utility A Been Honest About Safety				
Yes	74%	41%	27%	17%
No	17%	43%	45%	74%

Three Mile Island

11. Q. Was Pennsylvania Governor Thornburgh's credibility high or low at the time of the Three Mile Island Accident?

A. [Mileti, Sorensen] We have been able to locate no data on the Governor's credibility on nuclear power emergency response issues at the time preceding the TMI accident. We can offer some judgments about his credibility, however, based on data collected as a consequence of the accident.

First, we have data collected by Cynthia Flynn for the Nuclear Regulatory Commission. These data contain no information on credibility of various information sources during or after the accident. The data do, however, contain information on how "useful" information from various sources was perceived to be to people during the accident. The responses indicate that the Governor and the NRC were the two most useful sources.

Second, we have data collected by Field Research in 1981. Field Research asked people about the "believability" of information sources, a factor that is much closer to credibility than the much

different notion of "usefulness." In this survey "Pennsylvania State Government Officials" were rated by people living near TMI as being "very believable" by only 5% of the public, "somewhat believable" by 51%, and "not too believable" by 43%. This placed them among the persons and organizations having the lowest levels of believability.

By comparing these two items of data we conclude that:

- 1) It is impossible to determine if the Governor or State government had credibility during the TMI accident.
- 2) After the accident, State government officials were seen as not highly believable despite the Governor's usefulness as an information source.
- 3) It is possible, therefore, to have low credibility and yet be seen as a useful source of information in a nuclear power plant emergency.

12. Q. Is there evidence that the credibility of local or state government officials is low from time to time?

A. [Mileti, Sorensen] Yes, the data presented in our answer to the previous question suggest that in the context of nuclear power, the State government in Pennsylvania was not a highly credible source of information. The Field Research survey mentioned above also inquired about the believability of local government officials. Of the people questioned, 8% found local government officials "very believable," 41% found them "somewhat believable," and 40% found them "not too believable." Local government officials, like Pennsylvania state officials, were among the least believable groups asked about in the survey.

A similar result was observed for local government in the Yankelovich survey done for LILCO. The Suffolk County Executive and LILCO were the two least believable sources of information on nuclear power.

13. Q. Do these data mean that a utility cannot be a credible source of information?

- A. [Mileti, Sorensen] No. The evidence suggests that people tend to distinguish the levels of credibility among various categories of people involved with a nuclear power emergency. People will evaluate some types of people within an organization as having little reliability or believability and others within that same organization as being much more reliable and believable.

This seems to be the case for organizations that operate nuclear power plants such as Three Mile Island. Tables 4 and 5 below show data, collected after the accident at TMI, about the reliability and believability of information from the various sources listed in the tables. One of the extremely significant points they make is that people do not categorically dismiss the credibility of all people within the nuclear industry. For example, officers of Metropolitan Edison were considered "very believable" by only 5% of the zero- to five-mile population, but the chief nuclear engineer for the utility was considered "very believable" by 25% of the same population, and scientists from the nuclear power industry were considered "very believable" by 48%, making them one of the most believable sources of information. The same pattern is

established for the "reliability" of information: Metropolitan Edison officials had low credibility, while scientists from the nuclear power industry were the most reliable source of information.

A second important point is evident in these data. "Officials" of any affiliation have low reliability and credibility; at TMI, state and local officials were only slightly more believable than Metropolitan Edison officials. On the other hand, scientists consistently have high reliability and believability. Thus, the role a person plays seems to be more important in determining credibility than his organizational affiliation.

From this we can conclude that a scientist or engineer working for a utility will be a more credible source of information in an emergency than an official or officer of that utility, a local government official, or a state official.

Thus it is important that LERO use scientists, and also engineers, as part of the warning process, because the public will more readily believe in these roles and perceive the information that these people disseminate as credible, regardless of whether they work for industry, a university, or a national

laboratory. We would make this same recommendation even if Suffolk County were participating in emergency planning for Shoreham.

Support for the importance of scientific input in public emergency warnings comes from other studies as well. One of the most detailed investigations of the role that credibility plays in warning response was conducted on earthquake predictions. This was a study reported by Mileti, Hutton, and Sorensen, "Earthquake Prediction Response and Options for Public Policy," Boulder: University of Colorado, 1981. A purposive sample of 35 organizations were interviewed to determine what factors would make a prediction credible. Three factors emerged as being important. The most significant determinant of credibility was the scientific reputation of the person or organization making the prediction. The second most important factor was confirmation of the prediction by other knowledgeable parties. The third factor was the conveyed certainty of the threat. This helps to confirm that for warnings with a technical component, scientific recognition and verification are important determinants of credibility.

14. Q. You say "officials" have low credibility. But public health officials scored high in the Yankelovich survey, didn't they?

A. [Sorensen] Yes. It is quite likely that the public does not associate public health officials with the type of officials I refer to above. It is likely that public health officials are considered to be technical people, professionals, or scientists rather than elected officials or managers of large organizations. This supports the notion that perceived roles and their natures are the important determinants of credibility.

Table 4

<u>Source</u>	<u>% of respondents evaluating source as "very reliable"</u>	
	<u>0-25 miles from TMI</u>	<u>Statewide Control Group</u>
Scientists from nuclear power industry	44	51
Scientists from uni- versities and national laboratories	39	48
Nuclear Regulatory Commis- sion	31	31
Environmental protection organizations	27	31
State/local agencies and officials	11	9
Babcock and Wilcox offi- cials	11	18
TV news editorials	10	12
Antinuclear groups	8	6
Metropolitan Edison offi- cials	8	12
Daily newspaper editorials	5	9

Source: Field Research Survey (June 1980)

Table 5

<u>Source</u>	<u>% of respondents evaluating source as "very reliable"</u>	
	<u>0-5 miles from TMI</u>	<u>Statewide Control Group</u>
Doctor who is a radiologist	54	57
Scientists from universities and national laboratories	49	50
Scientists from nuclear power industry	48	45
Nuclear Regulatory Commission	37	25
Environmental protection organizations	31	30
Union of Concerned Scientists	26	34
Chief nuclear engineer for GPU	25	20
Local government officials	8	4
Pronuclear groups	8	11
Officers of Metropolitan Edison	5	16

Source: Field Research Survey (March 1981)

15. Q. Does the Ginna accident shed any light on the credibility issue?

A. [Sorensen] The accident at Ginna illustrated an emergency situation where better emergency information was provided to the public in a more coordinated fashion than at TMI. While the manner in which information was handled was not at all perfect, credibility did not seem to be a problem.

One possible explanation for this high credibility was the use of a mechanism for independent scientific corroboration and validation of utility generated information. The utility, Rochester Gas & Electric, used two independent experts at their information center to provide verification or refutation of RG&E information for the media. As a result, the news media used these experts to validate utility information and credibility issues. Thus the relatively good dissemination of information and a mechanism for ensuring the accuracy of information led to the media covering the event in a responsible way, and led people to trust the accuracy of the information being issued by the utility.

16. Q. In light of these data, how would you rate the likely credibility of LERO (not just LILCO) in an emergency?

- A. [Cordaro, Weismantle] Quite well. If we were to rely solely on the Suffolk County and Yankelovich polls, it would be a matter of indifference whether LILCO, Suffolk County, or the Governor of New York were in charge of an emergency response, since according to the polls substantial numbers of people mistrust each of the three.

According to these polls it is the NRC that has the highest level of credibility with the public. In an emergency the NRC would be involved in the response under the federal Master Plan, and LILCO has provided for an NRC presence in the EOC. The NRC will have representatives at the TSC, EOF, and ENC. In addition the NRC will provide a "State Liaison Coordinator" to the EOC. This person will stay in continuous communication with the NRC Region I Duty Officer in King of Prussia, Pennsylvania. The NRC will have an area designated in the ENC for their use and can be expected to participate in any press conferences, as they did at TMI.

Moreover, if the NRC is credible, it is reasonable to believe that DOE is also. Representatives from DOE's Brookhaven Area Office will be at the EOC to provide input and advice concerning dose assessment

and protective action recommendations. When DOE is represented, the EBS broadcasts will state that protective actions have been decided in consultation with DOE personnel from Brookhaven. We believe that people on Long Island view Brookhaven scientists as highly credible. This should add credibility to LERO recommendations.

Also, LILCO made provisions to consult with scientists, nuclear engineers, and officials from public agencies (FEMA, NRC, and DOE) on protective action recommendations to the public. These individuals will be referenced in the EBS messages. See LILCO Transition Plan, page 3.6-4, and OPIP 3.6.1, page 1, ¶ 2.3. And the messages are designed to give the public clear and accurate information about the amount of radiation that has either been measured or is projected at various distances from the plant. To put this information in perspective, the messages also relate EPA guidelines for sheltering and for evacuation. Thus the public can see for itself whether LERO's protective action recommendations make sense in light of EPA guidance.

17. Q. Why do you think LILCO is capable of writing and implementing a credible radiological emergency plan?

A. [Cordaro, Weismantle] The reason we feel confident that LILCO can implement a credible radiological emergency response plan is that LILCO has the only organization in the United States devoted to offsite radiological emergency planning for a single nuclear plant of the size (approximately 30 full-time people) and expertise of the Local Emergency Response Implementing Organization (LERIO). LILCO's work is probably the most extensive on offsite radiological emergency planning in the United States. The 30 or so full-time LILCO people working on emergency planning as part of LERIO have been involved with nuclear power plants for much of their professional lives. There is simply no way that any State or local government can match this depth and breadth of expertise.

18. Q. How does the quality of LILCO's planning effort affect LILCO's credibility in an emergency?

A. [Cordaro, Weismantle] We believe that as the public becomes more familiar with the quality of the LILCO planning effort, our credibility will rise.

C. The Effect of Credibility on
Emergency Response

19. Q. Dr. Mileti, you have testified elsewhere (see Pacific Gas & Electric Co. (Diablo Canyon Nuclear Power Plant, Units 1 and 2), LBP-82-70, 16 NRC 756, 823 ¶ 177 (1982)) that notification and instruction work best if they come from credible sources. Do you still hold this opinion?

A. [Mileti] Yes. Low credibility cannot help, and could detract from, the response of people and organizations in an emergency. However, having pre-emergency low credibility does not mean that a good emergency response cannot be implemented. In fact, because the credibility of groups and organizations can change over time, a good emergency plan should take steps to ensure that it will work even if those with high credibility at the time a plan is written happen to have low credibility when and if an emergency occurs. In other words, emergency planners should assume for the purposes of planning that the information-givers have low credibility with the public.

This strategy is doubly important inasmuch as no one group or person in American society is likely

to be perceived as highly credible by everyone else, and who is perceived as credible is likely to be different for different groups of people. For example, some groups of people tend to perceive politicians as not credible regardless of the issue; other groups tend to perceive big capitalist companies as not credible regardless of the issue; still others tend to perceive government as not credible regardless of the issue. Therefore, if emergency planning ignored credibility, it likely would produce a plan with a lower probability of being implemented well than if credibility considerations were incorporated into the plan.

20. Q. Dr. Mileti, can we conclude that if an emergency response organization has low credibility, people will not believe or obey it in an emergency?
- A. [Mileti] No, not necessarily. Contention 15 says that the credibility of the provider of information in an emergency is a determinant of the belief in that information which in turn is a determinant of emergency response behavior. It is alleged that low LILCO credibility would lead to disbelief and subsequently to the nonresponse (or perhaps wrong response) of the public and of many people and organizations with emergency roles.

In my opinion, LILCO's credibility should be assumed to be low in emergency planning regardless of evidence that might suggest that it is low, high, growing, or declining. Assuming low credibility for LILCO, a good emergency response can still be implemented if plans and preparedness are sound and take the presumption of low credibility into account.

I hold this opinion for two reasons. First, the presumed sequence of cause and effect made by the intervenors (low credibility causes disbelief and then disbelief causes nonresponse or wrong response) is not as simple as the contention implies. Other factors affect belief, and other factors affect response as well.

Second, the presumed sequence of cause and effect postulated by the intervenors (credibility to belief to response) can be managed in emergency planning. It is not an inviolate set of scientific laws with which we must live, and good plans can foster both belief and a good response when implemented even if one or some of the providers of emergency information enter the emergency with low credibility. Low credibility, therefore, does not

make planning for a good emergency response or implementing a plan that yields a good emergency response impossible; rather, it just requires that planning address more things than would be the case if high credibility were presumed. (High credibility, by the way, should never be assumed in a plan, for reasons I have already addressed.)

It should be said that credibility has covaried with belief in prior emergencies. However, it is quite possible to elicit belief even when credibility is low; and it is quite possible to obtain a good response of organizations and people in an emergency not only when credibility is low, but even when belief is low for some. The former is more readily accomplished and more important; that is, a goal of fostering belief can be achieved when pre-emergency credibility of the provider of information is low, and the response of people in the emergency need not be detracted from because of pre-emergency credibility configurations. The latter -- good response without belief -- has and will occur in all sorts of emergencies, but should not be assumed in a good plan.

The key question becomes, therefore, how can belief be elicited -- in the public and in people who work in other organizations -- by the information that comes during an emergency from a group or organization who had low levels of credibility before the emergency.

21. Q. What do you mean by "covaried" above?

A. [Mileti] "Covary" as used above means that, in some past emergencies people have been more likely to believe information if it came from a source that they perceived credible than from a source that they perceived as not credible. In other words, as the credibility of information "givers" increases, so does belief in that information by "receivers." However, remember that it is possible to elicit belief in emergency information even when pre-emergency credibility is not high because other factors can be addressed in emergency planning to achieve this end despite credibility configurations before an emergency.

[Barnett] In the anthropologically based group interviews I discussed above, despite the reservations expressed about emergency planning and emergency information, participants indicated they

would follow instructions, saying "What else can we do?" and "You have to believe someone at a time like that because you must decide what to do." So even where utility customers are suspicious of nuclear emergency planning and suspicious of their utility's general communications on nuclear power, they still indicate that they will listen to and follow instructions in case of a nuclear accident.

Moreover, from the data I presented above showing that the more antinuclear segments of society tend both (1) to be more skeptical of information from utilities and (2) to have greater concerns about radiation and radioactive wastes, we might well infer that these same segments will be most concerned to follow emergency planning instructions, even if they question their utility's honesty about nuclear safety communications in general.

22. Q. Drs. Mileti and Sorensen, what role do you think credibility will play in determining response?

A. [Mileti, Sorensen] The major finding from previous studies of the role that perceived credibility plays in shaping response to a warning or in evacuation is that when a warning is received from a source judged to have low credibility, people tend

not to take immediate action. Instead, they are more likely to go about their routine activity or to seek additional information. Thus, credibility gaps can be a cause of people not immediately responding to a warning, rather than actively doing something contrary to what they are told to do.

If we apply this finding to an emergency situation at Shoreham, we would expect people who have perceptions of low credibility for every warning/evacuation-notification source to not do anything out of the ordinary except to listen for more information. This applies to people who are advised to evacuate, to shelter, or to go about their normal activities. If further as well as previous information creates a believable warning, people will likely respond regardless of credibility. If people perceive one of the sources of the warning to be credible, then inaction is less likely. The assumptions behind Contention 15 that low credibility will lead to disobedience are simply not based on any previous research findings or evidence of which we are aware.

23. Q. Why do people sometimes act contrary to official announcements in natural disasters?

- A. [Sorensen] It is true that in natural disasters people at times act differently from what is recommended in an official announcement. But most evidence of this type of behavior is anecdotal and does not come from systematic observation.

More importantly, it is possible to understand why it occurs. Probably the chief reason is that evacuation or other recommendations are usually not issued as strict and precise orders. Frequently they allow some type of decisionmaking by members of the public. In other words, they are issued as guidelines that require individual judgments. When this type of recommendation is given, it is difficult and perhaps erroneous to decide after the emergency that members of the public acted contrary to a recommendation. First, they may have failed to hear the recommendation. Second, they may not have understood it. Third, they may not have believed it. Fourth, people may have failed to perceive they were personally affected. Thus, contrary behavior results from problems in the warning effort.

In some instances, particularly when the threat is imminent, more forcefully delivered advisements are

given, often door-to-door. In these cases, an extremely high compliance with official recommendations is achieved. The "stayers" often become the "anecdotes" that are highlighted by the news media.

We know of no studies of natural disaster evacuations where researchers have investigated people leaving who were specifically instructed not to evacuate. We believe this type of situation is rare.

[Mileti] There are obviously examples in emergencies precipitated by natural events where members of the public have acted contrary to "official" announcements and recommendations. There are also examples where public response was in line with "official" announcements and recommendations. What is important, however, is not that there are cases of each type in history, but that the question "why" has been researched and answered.

Emergencies with poor public emergency information can and do result in people acting contrary to "official" announcements, while those with good public emergency information see most people acting in ways that are consistent with maximizing public safety and following guidance in "official"

announcements. If emergency public information is, for example, clear, consistent, frequent, location-specific, accurate, credible, certain, detailed enough, provides adequate guidance, and so on (we have elaborated on these factors at length in our "shadow phenomenon" testimony), then public response is typically not contrary to guidance about what the public should do. There are many examples in the history of natural disasters where public emergency information was poor, and the public therefore acted in ways contrary to official announcements; there are also many examples where public emergency information was good, and the public followed advice about what to do. An example of poor information follows, although there are many more.

In 1972 "official" public emergency warnings and information were issued for the people of Rapid City, South Dakota for a flash flood that was about to strike their community. People were told in the "official" announcements to leave their homes and get to higher ground if they lived "abutting the creek." The location-specific factor of emergency information was not, obviously, very specific. Different members of the public, unfortunately,

defined the word "abutting" differently. The case of one victim is illustrative. She was asked why she did not evacuate her home (she had barely escaped the disaster with her life). In essence, she said "they told people who lived 'abutting' the creek to leave . . . I lived across the street from the houses that backed up to the creek . . . I didn't think they meant me." Those who were involved in providing the "official" announcements in Rapid City (or researchers who might come in to study the disaster) might well conclude that this woman did not follow "official" directions. The fact is, however, that the public emergency information during the Rapid City flood disaster was grossly inadequate, and it was so for many more reasons than the one this example illustrates.

People sometimes do act contrary to "official" announcements in natural emergencies; they do so largely when (and because) emergency public information is poor. Knowledge about what constitutes good emergency public information, if incorporated into plans and if implemented well during an actual emergency, can dramatically reduce the number of people who act contrary to "official" guidance about public safety in natural (and technological) emergencies.

I might make one additional point. The National Weather Service has learned many things over the years it has been charged with issuing public warnings for climatological hazards. Rapid City provided the lesson to them that words like "abutting" are inadequate. Location-specific information is now better described in their public warnings for climatological disasters.

24. Q. Why did so many people do other than what the Governor's advisory suggested at Three Mile Island?

A. [Mileti, Sorensen] It is true that more people evacuated at TMI than was suggested by the instructions in the Governor's advisory. This behavior is understandable, based on our knowledge of how people respond to warnings. First, the Governor's advisory did not tell the entire population what to do, only a specific subgroup. Without information directed at other groups not included in the "pregnant women and small children" category, it is quite inaccurate and misleading to say that people "did other than what the Governor's advisory suggested." Without information from the Governor, people acted on the basis of other information.

Support for this is found in Cynthia Flynn's survey for the NRC. Only 14% of those who evacuated said that the Governor's advisory was critical in making their decision. Thus, they left for other reasons. Of the families that did not evacuate, 71% stayed because they were not told to leave. Thus, many who stayed were waiting for guidance from official sources, and many who left acted on sources of information that filled the gap created by the lack of information in the advisory. Had the Governor's advisory given information to other groups of people, a different pattern of response would likely have occurred.

Your question also assumes that the Governor's advisory was the only information people acted upon. This simply was not the case. The major piece of information that was critical in deciding to evacuate was the hydrogen bubble (30%). People did not behave contrary to the advisory, but acted on the basis of their situational perceptions of the accident.

25. Q. How can belief be elicited?

A. [Mileti] Belief can be elicited if the full range of emergency information -- emergency broadcast

system messages, the information imparted by traffic guides, information from other channels and so on -- is taken into account. Belief in the information disseminated during an emergency -- even if it comes from a group with low levels of pre-emergency credibility -- can occur if the information being disseminated during the emergency, in general, conforms to the following characteristics, which all work to foster belief in some way:

1. The emergency information should be internally consistent, such that it does not raise questions in the minds of those who hear it and "dis-confirm" itself.
2. The emergency information should be accurate, such that people do not perceive that something is being withheld.
3. The emergency information should be clear, such that it is understood and not discounted because of a lack of understanding.
4. The emergency information should convey certainty about what is being said, so that people are not left with doubts because of how they might perceive doubts in the minds of those supplying the information.
5. The emergency information should be issued frequently enough to reduce the believability of rumors and misinformation and to enhance "confirmation" for people.
6. The emergency information should come from a mix of people, e.g., officials, scientists, and so forth,

because no one source is credible for all people.

7. The emergency information should come from multiple channels rather than a single one so that it enhances the "confirmation" process for people.

If emergency information generally conforms to these factors, it will likely be believed by those receiving it even if the pre-emergency credibility of the provider of the information is low. By itself, low levels of LILCO credibility before an emergency would lead to disbelief for some people and subsequently complicate response in an actual emergency; however, this is not likely to be the case in a real emergency, because the effect of the factors listed above will elicit public belief in emergency information even if LILCO's pre-emergency credibility is low when and if an emergency occurs.

26. Q. Why can emergency information come to be believed even when pre-emergency credibility is low?
 - A. [Mileti] The reason why good emergency information can come to be believed by the public despite the fact that entities are involved that may have low levels of pre-emergency credibility is straightforward. Dozens of studies soundly document that belief of emergency information comes after

"confirmation" of that information. "Confirmation" is achieved if frequency and channel multiplicity are planned for in the public information system. In addition, confirmation is enhanced if that information is consistent, accurate, clear, and certain. Coupled with a source that catalogues a mix of people (scientists and so on), confirmation (through channel multiplicity, frequency, consistency, accuracy, clarity, and certainty) will undoubtedly lead to belief of the planned-for emergency information for most people despite confounding factors like rumors, misinformation, and low pre-emergency levels of credibility. In an emergency, what is important is belief of the emergency information, and this can be achieved (and should be planned for) regardless of pre-emergency credibility configurations.

27. Q. How does LILCO's information system measure up against these standards?

A. [Cordaro, Weismantle] As we said in our testimony on the "shadow phenomenon," our emergency information system measures up well. We have deliberately applied the principles cited by Dr. Miletì in designing the system.

28. Q. The contention also alleges that heightened fears and anxieties would make the problem worse. What is your opinion about this?

A. [Mileti] It is alleged that presumed heightened fears and anxiety would make the credibility problem worse, specifically in reference to traffic guides and security personnel. This concern rests on the presumption that low pre-emergency levels of credibility would, by definition, lead to low levels of belief in emergency information. This presumption is unfounded and has already been addressed; that is, emergency information would and could be believable despite low levels of pre-emergency credibility. If belief of emergency information were low -- which I take as hypothetical, because how to make it believable is being addressed in the plan -- the notion that fear and anxiety would make it worse (I presume by causing people not to believe or to follow the directions of traffic guides) is an interesting hypothesis.

Fear and anxiety prevail in all emergencies. In fact, there are some who believe (and there is some evidence to support their belief) that "states" of fear, anxiety, stress -- or whatever other concepts

are used to describe motivation -- are necessary to elicit good warning response. Some evidence suggests that fear, anxiety, and so forth detract from a "good" response when they are either too low or too high. Too-low states emerge if emergency information does not convey enough information. Too-high states can emerge when an emergency follows very soon on the heels of a prior one in which people experienced massive death and destruction.

Heightened fears and anxiety in an emergency at Shoreham (in the context of information that is believable because it is consistent, accurate, clear, certain, frequent, specific about location, from a mix of sources, says enough, and gives guidance) would likely enhance the extent to which other providers of information like traffic guides and security personnel were believed rather than detract from it.

D. Other Evidence of People's Reactions
To "Unofficial" Directions

29. Q. Q. Are there other situations where people take direction from the agency that created the problem?
- A. [Cordaro, Weismantle] Yes. Frequently passengers on the Long Island Railroad and New York subway

system are told to change trains or get off trains due to breakdowns, derailments and delays in service. When a ship or airplane is endangered, the passengers readily accept directions from the crew. LILCO regularly warns people during gas leaks and electrical line failures, with no evidence of lack of public credibility. In addition, LILCO road crews must often detour traffic from people's desired routes. These situations suggest that if a person is somehow associated with the causative agency of an emergency, it does not mean that the public will disobey his recommendations or vent their anger upon him.

LILCO has provided an educational program on gas and electricity safety to police departments, volunteer fire departments, schoolchildren, and private contractors. In fact, the government of Suffolk County required that proof of attendance at LILCO's Contractor Safety Program be provided before a contractor can perform sewer hookups in the Southwest Sewer District. LILCO is regarded as knowledgeable and therefore credible on safety.

In emergencies involving gas or electricity, LILCO was called 41,531 times in 1983 to respond, as follows:

<u>Type of Emergency</u>	<u>Number of Calls for Help in 1983</u>
Wire down	5,596
Burning wire	4,081
Fire call (cut-off electricity)	857
Suspected Gas leak (47% - no leak found)	27,938
Other emergency	3,059

In many cases of this sort it is necessary for LILCO personnel to evacuate people from their homes or direct traffic around the affected area until the police or fire department arrives. Our experience is that the presence of the LILCO personnel is welcomed as a source of help and information.

[Mileti] There are indeed other cases where private companies have to give directions to the public in emergencies. We have talked elsewhere in this testimony about actual cases where this has happened, so we will here limit our answer to cases where this is actually part of an emergency plan for future emergencies. Some of the cases which come to mind follow.

Perhaps the most advanced nation on Earth in reference to emergency preparedness is Japan, where large and catastrophic earthquake emergencies have

occurred and will continue to occur frequently. Knowledge that a great earthquake will likely occur within a dozen or so years in a very populated area has led the Japanese to do perhaps the most sophisticated and advanced planning the world has ever seen. An integral part of their plans is the role of the private sector. In response to the earthquake and/or its prediction, the private sector is to help provide instructions to the public about what to do. For example, department stores have the charge of advising customers about what to do and where to go; most such stores have evacuation routes which, it is expected, employees will guide customers through after the earthquake. The role of the private sector in earthquake preparedness for giving segments of the population directions is much more elaborate in Japan than the one simple example here provided.

The last decade has witnessed many catastrophic fires in high-rise structures, for example, a bank in Brazil and a hotel in Las Vegas. As a result of these examples and others like them, and other reasons, the private sector is in many instances charged with the safe evacuation of people and the public from high-rise structures. For example,

several European nations expect the private owners of high-rise buildings to install and guide the public in an emergency down the sides of buildings through "body-tubes" the height of the building. The State of California (and many others) expect hotel owners to develop and then implement evacuation routes in fire emergencies. There are other examples.

Perhaps most analogous to the offsite response for an emergency at Shoreham from the examples discussed thus far is emergency planning for the next great southern California earthquake. This earthquake, experts agree, will occur within the lifetime of anyone now forty years of age or younger, will be the largest disaster in the history of our nation, and will far exceed the capacities of local, state, and Federal disaster response abilities. In fact, Federal, state, and local planning efforts are mounted on the "fact" that several southern California counties will have large portions of them that will literally be isolated from others for some seventy-two hours after the earthquake. In sum, government will not be able to help in any appreciable way for three days. This is hardly analogous to government not helping in an

emergency because of a decision not to, but it would have the same effect during the emergency, namely, little if any government response to offer help to those who need it. The planning effort initiated in the nation to prepare for this emergency (sponsored by the Federal government through the Federal Emergency Management Agency and state government through the California Seismic Safety Commission) clearly rests on a "self-help" approach to emergency planning. A good deal of the planning effort has been to labor to bring the private sector into the planning process (as well as citizen "self-help") to accomplish servicing needs in the first three days after the earthquake. The problem in California is convincing the private sector to become involved in emergency planning and not the fear that they would not be believed by the public if they do.

In each of these cases the plan is or is hoped to be involving the private sector in helping the public do things that maximize their safety. This is, in our opinion, the operational definition of "off-site" response in an emergency at a nuclear power plant.

30. Q. How about cases where people without particularly high "credibility" are nevertheless obeyed by the public?

A. [Mileti] There are many examples in everyday life where people follow the direction or instructions of those with low credibility, or those whose credibility is doubted, or those about whose credibility nothing is known. Several examples of this follow; these examples illustrate that "other factors" beyond credibility operate to determine if instructions are followed despite, and in addition to, credibility. In an emergency, "other factors" can be incorporated into emergency plans to help ensure that a public makes good decisions about what to do in an emergency despite the credibility factor. We do not mean to suggest that the examples provided are analogous to emergencies. What these examples do suggest, however, is that credibility, even when it is low, can be overcome by other factors in reference to people following instructions. How this can be achieved in an emergency is addressed elsewhere in this testimony.

Perhaps one of the most familiar examples of where people follow the instructions of those with low

credibility occurs in the workplace. Most people do not have to stretch very far back in their careers to recall working for a boss (who issued instructions about what they should do which were followed) who they did not view as credible or perhaps even competent.

Another familiar example occurs when adults go to a theatre or concert and follow the instructions of ushers. There are many adults who generically do not view teenagers as credible, yet most adults do follow the instructions of ushers (who are typically teenagers).

A third example is when people drive to a large event, for example a county fair, and are instructed to follow the directions of parking guides about where to park their cars. Most people can readily recall wondering why they followed instructions and parked further away from where they were going than they would have had the parking guides not instructed them. In general, the sorts of people who take jobs guiding cars in parking lots are not a credible group for many of those who follow their instructions in that circumstance.

A fourth example comes from emergencies themselves. There are many Americans who simply do not think of government as trustworthy or "politicians" as credible. Yet history is full of examples where emergency instructions from government and "politicians" have been followed despite credibility configurations.

That there are many examples of where people follow instructions from those with low credibility simply illustrates that "other factors" also influence why people do or do not follow instructions. Any good emergency plan can take these into account and help the public make good decisions about what to do during an emergency despite what happens to be the credibility levels or organizations or people participating in providing the public with instructions the day the emergency occurs.

E. Consequences of Disobedience

31. Q. Will the inaction or "overreaction" by a portion of the population in the EPZ affect the ability of the rest of the population to react appropriately?

A. [Cordaro, Weismantle] The remainder of the population would either be unaffected or helped in acting

appropriately. This is because if people sheltered when asked to evacuate it would reduce the amount of traffic on the roads. If people evacuated when asked to shelter, it would not affect those who did shelter.

32. Q. Suppose, hypothetically, that people did not obey LERO's protective action recommendations. What would be the result?

A. [Cordaro, Weismantle] If LERO recommended no protective action at all (that is, advised people to go about their ordinary business), and if some people decided to evacuate or to shelter instead, no harm would be done. Indeed, if people decided to evacuate and later on an evacuation was advised, then the evacuation would go more smoothly because some people had evacuated earlier without being told to.

If LERO were to advise evacuation and people instead were to shelter or to go about their normal business, then those people who declined to follow LERO's recommendation might receive higher radiation doses than if they had complied. But we do not understand the intervenors in this case to be alleging that "underresponse" is a problem.

Rather, they are focusing on "overresponse" -- people evacuating when told to do other things. (In any event, the problem of "underreaction" can occur in any type of emergency, and the only remedy is to disseminate consistent, accurate information, which LERO will do.)

Finally, if LERO recommended that people shelter and they evacuated instead, then they would receive higher doses only in those cases where sheltering was recommended because it would produce lower doses than if people were in their cars evacuating. By and large, this would be in cases in which the plume was coming very quickly, so that it would reach people in the process of evacuation, and resulted from a large release of short duration. The recommendation would be skewed toward evacuation the longer the release, if the length of the release was unknown. For example, if the release duration were unknown, LERO would assume a ten-hour release duration at the same level of release. This ten-hour figure would tend to make the protective action recommendation evacuation. Thus the problem of overreaction due to lack of credibility that Suffolk County and the other intervenors hypothesize would only present a problem in rare cases.

33. Q. What has been the reaction to LILCO's efforts to educate people about Shoreham so far?

A. [Cordaro, Clawson] Beginning in January 1983 LILCO has sent a periodic newsletter, called "Keeping Current," to all residential customers in the ten-mile EPZ. Included in the newsletter was a postcard for people to send back to LILCO's President with questions relating to Shoreham.

One might assume that if LILCO and its management were not credible, people would not seek information from them. Instead, approximately 2,000 postcards were received, many with multiple questions. In many cases, people sent additional postcards with more questions after the initial questions were answered by the President of the Company. This shows a substantial level of willingness to get information from LILCO.

IV. Subparts of Contention 15

A. Support Organizations

34. Q. Let's go through each of the individual subparts of Contention 15. First, consider subpart 15.A. Subpart 15.A alleges that people in the Red Cross;

the Department of Energy; ambulance, fire, and rescue organizations; and other support organizations will not believe LILCO. Do these organizations understand that it is LILCO that is implementing the offsite emergency plan?

- A. [Cordaro, Robinson, Weismantle] Yes. Numerous meetings have taken place between LILCO and the Red Cross, DOE, and ambulance companies. These meetings have resulted in a letter of agreement with DOE, a letter of understanding with the Red Cross, and letters of agreement and contracts with ambulance companies, which are included as part of Appendix B of the Plan. In addition, both the DOE and the Red Cross maintain controlled copies of the plan. (Fire and rescue organizations have been deleted from the Plan, because they do not provide any function that directly supports the emergency response.)

The DOE-RAP team will be the primary group doing offsite monitoring and dose projection. While the DOE will not be making any direct protective action recommendations to the public, they will have a primary input into the recommendation made by the Director of LERO.

35. Q. For each organization named in 15.A, what kind of information would the organization be supplied by LILCO during an emergency?

A. [Cordaro, Robinson, Weismantle] The information to outside organizations would be as follows:

<u>Organization</u>	<u>Information</u>
Red Cross	Emergency status that could result in the activation of re-location centers
DOE-RAP	Emergency status; radiological and meteorological data that will be used in dose assessment
Ambulance companies	Emergency status; locations of people requiring evacuation
Fire, rescue organizations, local law enforcement agencies	Information as appropriate from Public Service Liaison
Coast Guard	Emergency status; protective action recommendations for Long Island Sound

36. Q. Will personnel from these organizations be supplied with dosimeters?

A. [Cordaro, Weismantle] Yes. If they may actually enter the 10-mile EPZ, they will have dosimetry. People in this category are DOE and the Coast Guard personnel and ambulance drivers.

37. Q. Does this mean these people will be able to determine for themselves whether they are receiving harmful doses of radiation?

A. [Cordaro, Weismantle] Yes. They will have Direct Reading Dosimeters (DRD's), which may be read in the field and provide an indication of the cumulative whole-body dose. This is consistent with local radiological emergency plans everywhere.

38. Q. Will these organizations have trained with LILCO personnel or have been trained by LILCO?

A. [Cordaro, Robinson, Weismantle] Personnel from the U.S. Coast Guard and ambulance companies have received or will receive training. LILCO has received indications that the Coast Guard, Red Cross, ambulance companies, and DOE have participated or will participate in the drill and exercise program.

1. Red Cross

39. Q. Will the American Red Cross cooperate with LERO in a radiological emergency?

A. [Cordaro, Robinson, Weismantle] Yes. We have letters of understanding with the American Red Cross, and we are working with them on a regular basis to

implement the plan. The Red Cross has agreed to participate in drills and exercises. It is quite implausible to suppose that the Red Cross would agree to help in an emergency, work with LILCO to make plans, participate in exercises, but then refuse to function in an actual emergency because it doubted LILCO's word.

Moreover, it is hard to imagine exactly what "information" the intervenors suppose the Red Cross would receive from LILCO and then not believe. The information that the Red Cross receives from LERO is that there is an emergency at Shoreham that may require the activation of relocation centers. Even if the Red Cross thought that LILCO was wrong and that there really was no emergency worth worrying about, it seems unlikely that the Red Cross would decline to begin activating the relocation centers; any responsible Red Cross official would err on the side of caution and begin the activation process. Moreover, even if the Red Cross did not believe that there really was an emergency, it does not seem that it would take long for the Red Cross to confirm that there really was, and so the worst result would be that the activation of the relocation centers would be delayed a few minutes.

Also, since the Red Cross does not take directions from LILCO on the details or specifics of operating relocation centers, it is hard to imagine precisely what instructions from LERO the intervenors think the Red Cross would not follow.

Moreover, there will be someone from the Red Cross in the Emergency Operations Center. The Red Cross has agreed to send one of its people to the EOC to perform the liaison function. Information concerning decontamination and updates of the emergency would be relayed through the EOC to this person and on to people at the relocation centers.

2. Department of Energy

40. Q. How about DOE personnel from the Brookhaven National Laboratory?

A. [Cordaro, Weismantle] Again, we have a letter of agreement with DOE. Also, DOE has agreed to participate in drills and exercises. If DOE had doubts about LILCO's "credibility," it is reasonable to suppose they would have surfaced during the process of concluding the letter of agreement.

Moreover, the idea that DOE will be getting some sort of "information" from LILCO that it would not

believe does not make sense in light of what would really happen in an emergency. In an emergency DOE's own teams would monitor radiation and DOE personnel would make dose calculations. A DOE representative would be present in the Emergency Operations Center (EOC), and there would be a frequent interchange of information, advice, and ideas among LERO personnel and DOE personnel. In short, the idea of DOE sitting in a windowless room and receiving "information" or instructions from LILCO which DOE must first believe and then act on is unrealistic. What would go on would be a cooperative effort to assess doses and make protective action recommendations to the public.

[Mileti] The notion that LILCO might not be trusted or believed by other organizations, for example DOE personnel, does not recognize how people react in communitywide emergencies such as one at Shoreham. Emergencies such as these transform how groups and individuals approach each other and social life. Individual and organizational goals and objectives are transformed. The first priority becomes the collective safety of people and the community, and the prime goal and objective becomes serving the first priority.

People tend, in general, to identify with the collective or community as a whole, and to come together in efforts to enhance community safety. This social psychological "shift" has been given many different labels by sociologists (for example, the "emergency consensus"), and it has been consistently observed in emergencies where a community as a whole is threatened. This shift in how people approach life would enhance the coming together of workers, for example those in DOE and LILCO, who are working toward a common goal, for example, to assess doses and make protective action recommendations to the public. This is particularly the case for people or organizational workers with common and clearly defined prime roles in an emergency, like DOE and LILCO personnel who define and risk and determine actions for the public good.

There are also, however, cases in emergencies where organizations compete rather than cooperate with one another. This does not occur when roles, domain, turf, and responsibilities are clearly defined and understood. As well, competition is thwarted and cooperation enhanced if work objectives and goals require that people and organizations work together, and if this is planned for and known prior to the emergency.

Planning and the emergence of "emergency consensus" would cause DOE and LILCO to experience a "coming-together" to work together to accomplish goals in an emergency at Shoreham. The same would be the case for other organizations involved in the emergency response.

3. Coast Guard

41. Q. What about the U.S. Coast Guard?

A. [Cordaro, Weismantle] We have a letter of agreement with the U.S. Coast Guard, contained in Appendix B of the LILCO Transition Plan. This letter is essentially the same as the letter that the Coast Guard has executed for nuclear power plants in Connecticut. In addition, we have provided a training program for the Coast Guard. It is unreasonable to think that the Coast Guard would agree to participate, accept training by LILCO, and then not believe or not respond to a request to warn boaters.

4. Ambulance, fire, and rescue organizations, local law enforcement agencies

42. Q. What about ambulance, fire, and rescue organizations and local law enforcement agencies?

- A. [Cordaro, Weismantle] The LILCO plan does not rely upon any of these groups to provide a specific role in support of the emergency response. It is expected, however, that these groups will continue to perform their normal functions and fulfill their community responsibilities. (None of these functions is specifically required to satisfy 10 C.F.R. § 50.47(a)(1).)

However, to keep these organizations informed, the Public Service Liaison will provide appropriate information to them. For example, if a traffic guide either sees or hears of a fire, this information will be passed to the appropriate groups. If necessary, a LERO person qualified in dosimetry will be offered to accompany the groups into an evacuated area.

As part of our contact with ambulance companies, the following words are included:

The contractor's drivers shall be duly licensed and shall have received Emergency Preparedness Training prior to vehicle operation. This training shall be at the Company's expense and at a mutually agreed upon time and place.

Therefore, our contracts with ambulance companies

include the training time of the ambulance drivers. As part of our contract with ambulance companies, drills and exercises are included and a fee set out for participation by drivers.

5. Dose Assessment

43. Q. There are several functions that subpart 15.A alleges will not be performed because of this credibility problem. First, it is alleged that offsite accident and dose assessment and projection and recommendations to the Director of LERO as to what particular protective action should be recommended to the public cannot be implemented. What is your opinion of this allegation?

A. [Cordaro, Weismantle] The people outside LILCO who have a role in offsite accident and dose assessment and projection are the DOE RAP team. The contention subpart asks the Board to believe that the RAP team either (1) would not perform their accident and dose assessment functions at all because LILCO was in charge or (2) would do it on their own, without taking any information or advice from LILCO people in LERO.

In the first place, the existence of an agreement with DOE would seem to be a sufficient answer to both of these charges, if indeed both charges are being made. It is especially unlikely that DOE would not function at all -- that is, that it would first agree to provide dose assessment functions and then violate both that agreement and its statutory mandate from Congress by sitting idle, simply because it did not perceive LILCO people in LERO as credible.

We therefore infer that the contention subpart really refers to a hypothetical situation in which the DOE RAP team would not be as effective as it might be because it would disregard information received from LILCO people in LERO. But this picture is based on an unrealistic idea of how dose assessment works. Since the RAP team uses its own equipment and follows its own procedures, subject to directions from its own Team Captain in the EOC, and since DOE would be engaged in a cooperative venture with LILCO, the fear that the contention subpart expresses is pure fantasy.

6. Evacuation

44. Q. The next function is the protective action of evacuation. What do you think of this?

A. [Cordaro, Weismantle] The contention is that the evacuation cannot be accomplished because of the "likelihood that non-LILCO workers will not obey LILCO command and control orders." According to the contention, evacuation cannot be effected because either the Red Cross, the Department of Energy, the Coast Guard, or community ambulance, fire, and rescue organizations, and local law enforcement agencies will not follow LERO's directions.

To be blunt about it, the allegation makes very little sense. If the Red Cross did not obey instructions, it would not mean that evacuation could not be accomplished; at most it would mean that there would be a delay in getting relocation centers staffed. If the Department of Energy did not function, it would not mean that evacuation could not be done, only that an evacuation decision would have to be made based on LILCO's onsite dose projections, without the help of DOE's.

In addition, the DOE-RAP team responding to Shoreham are the same people who responded to TMI. They have responded to real emergencies previously and they would have no problem now.

If the Coast Guard did not function, in theory evacuation of boats in the EPZ might not take place, at least not right away. But the Coast Guard does not obey LILCO orders with respect to the details of how to notify the boaters. The Coast Guard would do that without any instruction from LILCO, except the advisement that an emergency exists. As with the Red Cross, it is simply not plausible that the Coast Guard, having signed an agreement with LILCO, would then not believe LILCO when LILCO said there was an emergency. If it did disbelieve LILCO, presumably it would not be very long before the Coast Guard could confirm from other sources that there really was an emergency.

As for community ambulance, fire, and rescue organizations and local law enforcement agencies, these are not necessary for effecting an evacuation and are not relied on in the evacuation plan, except for ambulances for which LERO has written agreements. Again, it is simply not plausible that

ambulance drivers would do nothing because they would not take LILCO's word that an emergency was in progress or that the ambulances were needed. If the allegation is that they would disobey detailed instructions from LERO and act on their own, the allegation is silly. An ambulance driver would have no way of knowing where to go to pick up disabled people (for example) unless he got that information from LERO. Presumably the contention does not mean that ambulance drivers can be expected to attempt an emergency response based on their own judgment and in defiance of advice from LERO.

7. Relocation Centers

45. Q. The final function that it is alleged will not be performed (in subpart 15.A(3)) is the staffing of relocation centers and the providing of necessary services for evacuees. What do you think of this?

A. [Cordaro, Weismantle] This apparently refers to the Red Cross, which has been addressed above.

B. Members of the Public Advised to Shelter (Subpart 15.B)

46. Q. What is the gist of subpart 15.B?

A. [Cordaro, Weismantle] That many people advised to shelter would evacuate instead.

47. Q. Under what circumstances would people be advised to shelter?

A. As Attachment 3 to OPIP 3.6.1 shows, for an airborne release, sheltering would be advised under any of the following four conditions:

1. The projected sheltering dose to the thyroid is less than 25 rem
2. The projected sheltering dose to the thyroid is equal to or greater than 25 rem and the evacuation dose to the thyroid is equal to or greater than the shelter dose.
3. The projected shelter dose to the whole body is less than 5 rem but greater than 1 rem
4. The projected shelter dose to the whole body is equal to or greater than 5 rem and the evacuation dose is equal to or greater than the shelter dose.

48. Q. What do the results of the surveys conducted by Suffolk County and LILCO indicate relative to the implementation of protective actions?

A. [Cordaro, Miletì, Weismantle] In the County's survey within the EPZ 17-18% said they would shelter when told to evacuate, and 40% said they would

evacuate when told to shelter. The precise figures for people who were asked to assume they had been advised to stay indoors were as follows:

	<u>Five Mile Zone</u>	<u>Six to Ten Mile Zone</u>
People within 5 miles told to stay indoors		
Normal business	4%	
Stay inside	52%	
Leave home	40%	
Don't know	<u>5%</u>	
	101%	
People from 6 to 10 miles told to stay indoors		
Normal business		5%
Stay inside		39%
Leave home		52%
Don't know		<u>3%</u>
		99%

In questions 12.A and 12.B on the Yankelovich survey (Table 14 from the Yankelovich report), when people within 5 miles of the plant were told to stay indoors, 71% of the respondents within the 5 mile zone said they would actually stay indoors, while 24% would leave home and go somewhere else. When the additional information was added that others are told to go about their normal activities, the numbers for people within the 5 mile zone were still 71% who would do as the message advised and

22% who would leave home and go somewhere else.
(In both cases a very small percentage would do
what they normally do or were uncertain.)

[Mileti] It is important, however, to keep the results of both of these polls in proper perspective. The answers people gave to these poll questions (even if we dismiss the role that bias may or may not have played in the studies and the "quality" of measurement) were their guesses about future behavior. In a very real sense all that the results of these polls indicate is that for the implementation of protective actions, almost everyone thinks it is a good idea to engage in protective actions when and if the need ever exists. This, by the way, was known before either of these polls was conducted; it also suggests that in conjunction with a good public emergency information system that can help people make good decisions about what to do in an actual emergency, emergency planning for the implementation of protective actions on Long Island could be quite successful.

49. Q. How useful are these results in predicting behavior?

A. [Cordaro, Mileti, Weismantle] The reasons why opinion surveys should not be used to determine future behavior in an emergency are well-documented in LILCO's testimony on the so-called "shadow phenomenon" (Contention 23). Also, that testimony shows that giving people additional information about the risk changes their predictions about their behavior.

50. Q. Does this effect show up anywhere in the surveys?

A. [Cordaro, Mileti, Weismantle] Yes. In the Yankelovich survey, question 16 asked what the response would be to an emergency requiring evacuation of everyone within 10 miles of the plant, to which 74% answered that they would evacuate. In question 17, the same question was asked but with the additional information that people more than 10 miles from the plant need not evacuate. This added piece of information provided enough reassurance that now only 58% said they would evacuate.

51. Q. What does this show?

A. [Cordaro, Mileti, Weismantle] It shows that people will respond based upon the information they receive. If the messages broadcast provide clear and

accurate information about the various protective actions and their consequences, the public will respond appropriately.

52. Q. Does LILCO expect that everyone will follow the recommended protective actions?

A. [Cordaro, Mileti, Weismantle] No. There may always be some people who will not follow the recommended protective actions in an emergency -- for example, the people who went to stand on bridges to see the flood waters when flood warnings and evacuation advisements were issued for the 1972 Rapid City flood, or the people who do not evacuate as advised to but rather stay behind to have "hurricane parties" during hurricane emergencies along the Gulf Coast (there have been many such examples with hurricanes over the last several decades). But we try in the LERO emergency public information system to minimize the number.

53. Q. What are the implications of this?

A. [Cordaro, Weismantle] Assuming that some people, when advised to shelter, will evacuate instead, it is hard to know what conclusions Suffolk County would have us draw. One possible conclusion would

be that the sheltering option should be eliminated from the plan. But since sheltering is adopted only (1) as a precaution designed to reduce already-low doses even further with little effort or (2) as a means to reduce doses below that which would be received during an evacuation (for example, if the plume were moving very quickly and it would be better for people to be in their houses temporarily as the plume passed than in their vehicles), it would be irresponsible to eliminate the sheltering option just because it might not be used by everyone who should use it.

The other possible conclusion, which presumably Suffolk County draws, is that the plant should not operate because, despite LILCO's best efforts, some people might not do what is best for them in an emergency. We simply do not believe that this conclusion is warranted by NRC regulations. It is impossible to tell exactly how many people in a given emergency might actually evacuate when told to shelter. But the mere possibility that some people might disregard advisories to shelter (which is something that could happen under any emergency plan anywhere, no matter who was implementing it) is, in our view, not a basis for finding that NRC

regulations are not met or that the power plant should not operate.

54. Q. Do preemergency education materials for the public (for example, the brochure) explain that sheltering can reduce radiation doses?

A. [Cordaro, Weismantle] Yes. Page 7 of the public education brochure explains the benefits of sheltering and how it should be implemented. This brochure will be sent to all homes in the ten-mile EPZ. Sheltering will also be addressed in other facets of the public education program, such as the transient information packages and telephone book inserts.

55. Q. What are the transient information packages?

A. [Clawson, Cordaro, Weismantle] We intend to duplicate information packages that were used by RG&E for Ginna. Our packages would include zone-specific maps, routing directions and basic emergency information such as EBS stations, sheltering information, and emergency classifications. These information packages would be sent to all nonresidential customers for distribution to the public in a similar fashion to credit card application displays at a local merchant.

56. Q. Will EBS messages at the time of an emergency explain why sheltering is beneficial?

A. [Cordaro, Weismantle] No. The EBS messages are deliberately limited in length and highlight only imperative information such as which people should shelter, and what sheltering means. The messages do, however, tell people to refer to the brochure, where the benefits of sheltering are explained. See OPIP 3.8.2, Messages E, F, and G.

57. Q. Could information about the benefits of sheltering be provided during an emergency?

A. [Cordaro, Weismantle] Yes, of course. The EBS messages included in OPIP 3.8.2 are only sample messages to be used initially. Because additional EBS messages will be developed as the emergency progresses, specific details and information will be provided as necessary.

C. School Authorities (Subpart 15.C)

58. Q. What does subpart 15.C say?

A. [Cordaro, Weismantle] The subpart says that due to LILCO's low credibility, school officials may not believe information or follow recommendations

provided by LERO and may therefore decline to implement the appropriate protective actions.

59. Q. What "information" will school authorities receive from LILCO ordinarily, regardless of whether an emergency ever occurs?

A. [Cordaro, Weismantle] LILCO has made numerous contacts with the schools regarding emergency preparedness, as LILCO's written testimony on schools demonstrates. LILCO has sent all the EPZ school district supervisors a package of material that contains the following:

- Rockland County Plan (school portion)
- Newcastle County, Delaware School Procedure
- Generic Sample School Procedure
- N.Y. State Education Dept. Requirement for School Disaster Plans

In addition, LILCO has offered to meet with the school districts in order to provide additional assistance. One such meeting took place on January 16, 1984, and another took place on March 7, 1984. Information sessions will be offered for personnel at individual schools.

60. Q. What information would they receive at the time of an emergency, and how would they receive it?

- A. [Cordaro, Robinson, Weismantle] Every school district has one or more tone alert radios, so that each district will receive immediate EBS notification of an emergency. The EBS message will provide specific guidance for schools. Sample EBS messages are in the LILCO Transition Plan. In addition, the LERO School Coordinator will contact the schools to verify that they have received the EBS message, to ask what actions the schools are taking, and to give an individual point of contact for the school district administrators (OPIP 3.6.5, section 5.3).

If schools were not already in session when an emergency occurred, they would be advised that school should be cancelled until the emergency was over. If schools were in session, the message would be that schools were advised to implement their early dismissal plans, to shelter the students at school, or to evacuate the students directly to designated relocation centers.

It is now planned that the schools will initiate early dismissal at the Alert emergency classification or above when no protective actions have been recommended. If protective actions have been recommended, all schools in the EPZ will implement the same action. See OPIP 3.6.1, section 5.3.1.

61. Q. On what information do school officials typically base their decisions to implement an early dismissal for a snow emergency?

A. [Cordaro, Weismantle] Our understanding is that school officials rely on the weather reports on the radio or on a service called "Accuweather."

62. Q. So the school official does not have to make fine judgments about radiological health and safety, but, in the County's view, he does have to decide whether or not to believe that the recommendation in the EBS message is the best thing for his students?

A. [Cordaro, Weismantle] Yes.

63. Q. Do you think that the school officials would attempt to do what was best for the health and safety of the students in their care?

A. [Cordaro, Weismantle] Yes. We believe that everyone in this case can agree on that.

64. Q. What do you think school officials would do about the EBS advisories?

A. [Cordaro, Mileti, Robinson, Weismantle] Clearly they would not do nothing -- that is, ignore the

emergency situation. This is inconsistent with everything we know about human behavior, particularly human behavior in emergencies. Nor is it credible that school officials would immediately implement a protective action different from the one recommended by the EBS message, because they would have no basis on which to do so.

This suggests that they would either follow the EBS advisory or seek further information. Indeed, some of the school officials who testified earlier in this proceeding said that they would try to confirm the protective action recommendation with State or local officials.

65. Q. Suppose they tried to seek further information or confirmation? What would this mean for the emergency response effort?

A. [Cordaro, Miletì, Weismantle] Ultimately the school officials would act on the best information available. If they did not succeed in reaching a State or local official to talk to, then they would be left once again with the EBS messages as the best information, and surely after a short delay they would implement the EBS advisory. If they succeeded in reaching a State or local official,

and if that official had not yet begun to take part in the LERO emergency response, then he would have no useful information to offer, and once again school officials would be left with the EBS advisory as the best available information. Again, we trust that any State or local official who talked to a school official would act responsibly and not order a protective action recommendation different from the one on the EBS message without any basis for doing so.

Nor do we think the school officials would wait long after the EBS advisory. To think otherwise would be to picture a school official, hearing an EBS message every 15 minutes with precise instructions applying to him and his students and yet paralyzed by indecision as he tries to reach various authorities by phone, finding them all unreachable or possessing no reliable information he can use. We do not think this would go on for long.

66. Q. You indicate that testimony earlier in this proceeding suggested that some school officials would not obey LERO's directions without confirmation by government officials. Is this likely to be a big problem?

A. [Cordaro, Weismantle] No, for the reasons stated above. But of course if the school officials spent time trying to confirm the EBS advisory the beginning of protective actions for students would be delayed somewhat.

School plans could include provisions for seeking confirmation of information received (maybe from the NRC or DOE) if school officials feel this is necessary. LILCO will try to help the schools come up with a means of confirmation if the schools wish.

Indeed, LILCO will do the following in any event: In an emergency State and local government officials would be notified even though the governments had not participated in planning. LILCO will also inform the schools in advance and in writing which levels of government are to be notified in the event of an emergency, so school officials will know what government officials to call if they wish to get government confirmation.

67. Q. What are you doing to enhance your credibility with school officials?

A. [Cordaro, Robinson, Weismantle] We are interested in developing a close working relationship with the schools and have begun the process of developing such a relationship, as related in our testimony on the schools issue. Also, we will modify the school procedures to be consistent with the method of operation that the schools prefer. These things, we feel, will help establish an atmosphere of trust.

D. Traffic Guides (Subpart 15.D)

68. Q. Subpart 15.D claims that people will be hostile to traffic guides. Is that so?

A. [Mileti] It is alleged that traffic guides and security personnel would be viewed with hostility and suspicion. Nothing would be further from what would actually happen in an emergency at Shoreham than this speculative proposition. At the same time, it is likely that an emergency at Shoreham would arouse hostility and suspicion. The issue, however, is when will the hostility and suspicion arise and toward whom will people feel hostile and suspicious.

Suspicion, defined as not trusting or believing, could characterize how people view those giving

information -- e.g., traffic guides or security personnel -- if emergency information of other sorts (EBS messages, for example) were not believable. But traffic guides or security personnel would not be viewed with suspicion if the general emergency information were believed.

Hostility during an emergency which poses a threat to the local community would not arise toward emergency workers regardless of who they worked for or what their emergency jobs were. Even if emergency information were not perceived as believable, few if any people would engage in acts of hostility toward others, or in any other sorts of acts that would detract from the goal of general public safety. Under communitywide threats, people of all sorts put the emergency and safety first.

Hostility toward LILCO will arise, but when the emergency is over. And it will be directed toward management. Hostility will not be directed to on-line emergency workers during the emergency.

Credibility is an important issue to address in any emergency plan because it bears on believability of emergency information. Believability is essential in an emergency, and it can be achieved despite the

low credibility profile of organizations before an actual emergency.

69. Q. What information are the traffic guides trying to convey?

A. [Cordaro, Weismantle] The fastest and safest route out of the EPZ.

70. Q. How will the public know that this is the purpose of the traffic guides?

A. [Clawson, Cordaro, Weismantle] Traffic guides will be posted in strategic locations to expedite the evacuation. The public information brochure contains a brief description of traffic guides so the public can become aware of their purpose during an emergency. In addition, the population is accustomed to seeing traffic guides from daily experience (school crossing guards, at construction sites, and LILCO and telephone company personnel).

71. Q. Will this be the first time the public learns of the routes out of the EPZ?

A. [Clawson, Cordaro, Weismantle] No, the public will be sent brochures and automobile glove box stickers with the same information each year. In addition,

the community telephone books ("Yellow Books") will have inserts with this information. Also, transient information packages will be mailed to all non-residential LILCO customers.

72. Q. So the traffic guides will be confirming the information already known by many evacuees?

A. [Cordaro, Weismantle] Yes.

73. Q. What if the evacuees want to go in a different direction?

A. [Cordaro, Weismantle] They can go in any direction they want.

74. Q. Will this affect the evacuation times?

A. [Cordaro, Weismantle] Yes. The exact effects were discussed in detail in LILCO's written testimony for Contention 65, Questions 39 and 40, pages 74-79.

75. Q. Subpart 15.D also says that LILCO personnel assigned to perform security functions (i.e., law enforcement functions at the EOC, the relocation centers, and the EPZ perimeter. What functions is the subpart talking about?

- A. Security functions at the EOC and at the Staging Areas entail checking for LERO identification and keeping a record of personnel logged in and out. Security functions at relocation centers entail lending support to American Red Cross personnel as requested. Those traffic guides positioned at the EPZ perimeter are assigned the responsibility of deterring entry into the EPZ.
76. Q. Where in the Transition Plan are these functions described?
- A. [Cordaro, Weismantle] They are described in a new procedure (OPIP 4.1.3) that will be included in the next revision of the Plan.
77. Q. Would LILCO's alleged lack of credibility affect these functions?
- A. [Cordaro, Weismantle] It would not. The purpose of the security functions described in the Plan and Procedures is to provide the means for establishing the identity of whoever leaves or enters a LERO facility, so that if non-LERO people attempt to enter a secure facility, the Security Coordinator will be informed and can track their movements or assign a guard to accompany them.

78. Q. The subpart says lack of effective perimeter control will result in persons' entering the EPZ, being exposed to radiation, and impeding evacuation from the EPZ. What is your response to this?

A. [Cordaro, Weismantle] In the case of LERO personnel positioned at the EPZ perimeter, their function is simply to deter entry into the EPZ. They do this by explaining the emergency situation to those attempting to enter the EPZ. Since these persons who opt to enter the EPZ will be traveling in an opposite direction of those evacuating, they should not impede the evacuation.

79. Q. Dr. Mileti, do you have anything to add about whether lack of credibility will affect perimeter control or security functions at the EOC or the relocation centers?

A. [Mileti] Yes. I would first, however, refer you to my prefiled supplemental testimony (pages 25 to 27) for Contention 65. To recap the essence of that testimony: the public does not engage in aberrant or aggressive acts in emergencies like those that could occur at Shoreham (community-wide mass emergencies where some threatening externality to a human collective imposes a risk to community life,

health, etc.). Credibility is simply not a relevant factor for security because there would be very little if anything for security personnel to accomplish -- except, perhaps, dealing with news reporters -- at the EOC or at relocation centers. The same would also be true in reference to perimeter control, with the exception of dealing with people who wanted access to the EPZ. The number of these, however, would be few since emergency public information would be good and would likely discourage all but the most determined from wanting access to the EPZ in the first place. The most determined, however, would likely gain access to the EPZ. These would be few and no more than would be the case regardless of the organizational affiliation or credibility of those overseeing perimeter control.

E. Members of the Public Listening to EBS Messages (Subpart 15.E)

80. Q. What is your reaction to subpart 15.E?

A. [Cordaro, Weismantle] Subpart 15.E says the public will not obey EBS messages. Since EBS messages are the means for advising the public of protective action recommendations, this subpart seems to be

functionally identical to the "main" Contention 15, and our testimony above covers the subpart. Also, we testified about the EBS messages when the "shadow phenomenon" (Contention 23) was being litigated.

F. Rumor Control (Subpart 15.F)

81. Q. What is the subject of subpart 15.F?

A. [Cordaro, Weismantle] That the rumor control phone will not be effective because of LILCO's lack of credibility.

82. Q. What guidance has the NRC given about rumor control?

A. [Cordaro, Robinson, Weismantle] While NUREG-0654 states in section II G.3.c. that "[e]ach organization shall establish coordinated arrangements for dealing with rumors," there is no more specific guidance on how to accomplish this.

83. Q. How is rumor control handled under the LILCO Transition Plan?

A. [Cordaro, Robinson, Weismantle] People call into the LILCO district offices, which receive updated news releases. Any questions that they cannot answer are referred to personnel at the ENC.

84. Q. How will people know the phone numbers of the district offices?

A. [Robinson] The number is on their bill and in the phone book. LILCO customers called the district offices 1,128,337 times in 1983.

85. Q. What if people call some other number?

A. [Cordaro, Robinson, Weismantle] We must anticipate that when a person hears a rumor that involves LILCO, he may reach for his phone and call whatever LILCO phone number is available to him. This could be

- the phone number on his electric or gas bill
- the LILCO number in the phone book
- a number he has of someone who works for LILCO
- the number of the Shoreham plant manager

In short, any phone at LILCO that can be dialed from the outside has the potential of ringing with a question or rumor during an emergency at Shoreham.

86. Q. How will you handle this?

A. [Cordaro, Robinson, Weismantle] Our district office call boards and customer service centers will be trained to refer rumors and questions that they cannot handle through Rumor Control, the same way they would in a storm emergency. Rumor Control at the Emergency News Center (ENC) will be responsible for distribution of information through the Company call boards.

All Company phone books will have a one-page insert added with instructions on what to do if someone calls a LILCO phone number with a question about Shoreham. The instructions will be to refer the caller to the Customer Service numbers.

87. Q. Will LERO monitor radio and television reports so as to learn if misinformation is being disseminated?

A. [Cordaro, Robinson, Weismantle] Public Information staff at the EOC and ENC will be monitoring radio stations, which are the most immediate news source.

88. Q. Will LERO monitor the phone calls from the public to determine if there seem to be widespread rumors that need to be corrected by EBS messages?

A. [Cordaro, Robinson, Weismantle] A log is kept of all rumor calls so that it will be evident if there are recurrent rumors.

89. Q. Why would people call LILCO's offices rather than elsewhere, such as County or State offices?

A. [Cordaro, Robinson, Weismantle] There is a local communications network -- as is used during storm restoration -- by which the latest accurate information will be relayed to the County Center and town halls. The onsite plan has a liaison with local governments to provide accurate and consistent information about the emergency.

90. Q. Will the people who call think that LILCO is a credible source of information?

A. [Cordaro, Robinson, Weismantle] Yes, or else they would not call. It's a method of confirmation. People tend to seek several sources. Since LERO will be generating both the EBS messages and the responses to callers on the rumor control system, it should be relatively easy to make these two sources consistent with each other. The information will also conform to that available at other frequently called sources.

91. Q. How will the rumor control system be kept consistent with information being broadcast in EBS messages and press releases?

A. [Cordaro, Weismantle] All press releases dispatched from the ENC are transmitted to the LILCO district offices. While rumor control is a coordinated effort between Shoreham and LERO, the lead responsibility is assumed by Shoreham.

92. Q. Is it common in radiological emergency response plans for the utility to handle rumor control?

A. [Robinson] Yes. Rumor Control is commonly staffed by utility personnel using the utility's offices. Local governments typically do not have either the personnel or equipment to maintain an adequate rumor control operation. This is evident in emergency plans around the country and on Long Island during major power outages.

We asked WTM Management Corporation to phone other nuclear utilities to determine how their local emergency plans handle rumor control. WTM reports that 35 utilities report that they handle rumor control themselves, and 10 more do it jointly with the government. Only seven reported that the

government handled it. (Four more reported their plan was still under development, and one gave an incomplete answer.)

93. Q. Does it make sense to use the LILCO district offices for rumor control?

A. [Robinson] Yes. Because of the need to have large phone banks with easily found telephone numbers available on very short notice, it would be impractical not to use the LILCO district offices.

94. Q. Are there other sources of information available to the public?

A. [Clawson, Cordaro, Weismantle] There is every reason to believe that the media would provide extensive coverage of any incident at Shoreham. Shoreham, of course, is located adjacent to one of the major media markets of the world. In terms of information dissemination, this location is a positive factor for the local public.

To assist the press in coverage of an incident at Shoreham there is a media education program as part of the onsite plan. The goal of this program is to give reporters a basic understanding of what might occur during an incident, what roles participants

would have, the resources we are providing for them, and the groundrules for coverage.

Reporters can be expected to take the information provided to them by official sources and seek to confirm or refine the information. In many cases a reporter would seek to interpret the information. For example, if there were a protective action recommendation to evacuate Zones A, B, C, D, and E, a reporter might seek to know why, how many people were involved, what special facilities are included in the zones, what special provisions are made, what routes the evacuees take, time estimates for evacuation, and where the evacuees are going. I would expect requests from the press to monitor in an evacuation, that is, to ride with a bus driver, film at transfer points and relocation centers and witness the work of traffic guides. Our ability to anticipate these requests to respond to them will determine the nature of media coverage as well as the public perception of how well we are dealing with the incident. EBS messages will be repeated until updated information is provided as soon as it is available. We will provide information to local government agencies, just as in a major service interruption.

95. Q. So people will always have a method of getting accurate up-to-date information?

A. [Cordaro, Weismantle] Yes.

96. Q. How will LILCO (or LERO) work with the news media to make sure they have accurate information?

A. [Clawson, Cordaro, Weismantle] To ensure that the media have accurate information, the Public Information Staff ensures press releases are approved by the LERO Director and by government and utility Coordinators of Public Information (CPI's) before media dissemination. Press conferences will be conducted periodically in the Press Conference Room of the ENC. A panel will be available to provide up-to-date information on the status of the emergency.

The Emergency News Center is designed to be an all-encompassing information center for reporters during an accident at Shoreham. It is equipped with telephones, typewriters and electrical hook-ups for broadcasting. It has the necessary equipment for a reporter to do his or her work. The ENC is to be the central place for disseminating information, with representatives from all entities accessible.

Since all official information pertaining to the accident would be disseminated from the ENC, that is the most logical place for reporters to establish themselves, though most reporters would use the ENC as a base to make other calls and contacts.

97. Q. What assurance do you have that officials from Suffolk County or the State of New York will not give out misinformation in an emergency?

A. [Cordaro, Weismantle] We believe that both State and County officials would act responsibly in the event of a radiological emergency. We believe that acting responsibly in such a situation would include declining to disseminate information without having an adequate basis for that information. Since the only sources of accurate information in the early stages of an emergency would be LERO (including the Department of Energy) and the Nuclear Regulatory Commission, we trust that State and County officials would not disseminate unconfirmed information, that is, information not cleared by one or more of these organizations.

Also, as we have testified elsewhere, we believe that in a real emergency State and local officials would wish to take part in the emergency response

and would take advantage of the apparatus set up by LERO to respond to the emergency. Indeed, since testimony was filed in Group I of this litigation, Governor Cuomo has said that in a real emergency State and local resources would be committed to the response.

If either State or County officials decided to participate they would be able to assume a position equivalent to the Director of LERO. This would allow the existing LERO organization to implement any directives of governmental authorities.

The onsite organization includes a mechanism for making the latest information available to local officials for those members of the public who choose to call them rather than LILCO. The consistency of the information is enhanced by using hard copy, well-trained personnel and having the same releases available to the public through the media, local government officials, and the LILCO District Offices almost simultaneously.

Since government officials can have access to the same information that the utility receives at the same time in the EOF, can be present at all times in the ENC, and is welcome to assume the public

information process at the EOC; there is no basis for not believing the information disseminated by rumor control.

98. Q. What assurance do you have that the press will not disseminate incorrect information?

A. [Clawson] We understand, and accept, that the press will not accept everything that LERO tells them without checking it. It is the common practice of reporters to attempt to confirm information that they get from any given source. The key to credibility with the media in emergency situations is accessibility, honesty, and the ability to disseminate accurate and complete information. Most likely reporters would attempt to confirm information from LERO by calling DOE or the NRC. Both DOE and the NRC have public affairs departments, and we must presume that they are designed to avoid giving out misinformation. Also, many reporters have their own individual sources at the Department of Energy or NRC, and they might well call these people. Again, we trust that DOE and NRC personnel would act responsibly and not give information to the press without basis.

99. Q. How can you be sure the reporters wouldn't seek to confirm information with State or County officials?

A. [Clawson] They probably would. But the press is well aware that County and State officials are not participating, at present, in emergency planning for Shoreham and, if those officials were still not participating in a real emergency, then they would have little or no information to offer the press. Again, presumably these officials would act responsibly and say that they had no first-hand information, if that were true. Even if they did not say so, members of the press are perceptive and can tell when a news source has no first-hand information to offer.

100. Q. What do you do if the State and County officials do decide to participate in the emergency response?

A. We have space and communications equipment reserved for County personnel and State personnel in the EOF and the ENC. Moreover, we have plans to integrate them into the decisionmaking at the EOC if they show up.

G. Public Education Brochure (Subpart 15.G)

101. Q. What is the subject of subpart 15.G?

A. [Cordaro, Clawson, Weismantle] The subpart says that the LILCO public education brochure will not be believed because of LILCO's lack of credibility.

102. Q. What is the function of the emergency planning brochure and other pre-emergency education efforts?

A. [Mileti] The accumulated evidence in the social sciences on the function of pre-emergency public brochures and other pre-emergency education efforts is clear, although most would call it inconclusive. The studies have been unable to document that pre-emergency public education efforts for rare community emergencies make any real or statistical difference in terms of how the public responds in an actual emergency once it occurs. This may be the case because public behavior in emergencies is situationally determined.

At the same time, the notion that education does not work does not make intuitive sense; for this reason, I know of no expert who would suggest that it not be undertaken. But the function actually

served by pre-emergency public education efforts is quite different from what some people assume it is or hope it could be.

Pre-emergency education serves the function of priming the public for a future emergency. It should address several basic topics to accomplish this limited purpose. These are (1) the nature of the risk (for example, that radiation in a nuclear power plant accident may be airborne), (2) the emergency information system (for example, that such a system exists), and (3) the range of protective responses the public may engage in (for example, sheltering versus evacuation).

No matter how well these topics are addressed, however, pre-emergency education will not be a determinant of what the public does or does not do during a future emergency. It will simply prime the public to, perhaps, remember that there is an emergency information system to turn to in an actual emergency, prime them to understand the concepts of sheltering and evacuation, and prime them to understand what the risk is in an actual emergency. The actual determinant of what they come to define as the risk in an emergency and what they actually do

in response will be the emergency information that they receive during the emergency itself, not the pre-emergency education efforts.

[Clawson] Probably the most important function of the brochure is to advise people to tune in their radios when they hear the sirens. It isn't at all likely that people would not believe that they should turn on their radios or not believe the frequencies listed in the brochure. Even if they didn't trust the brochure, they would turn on the radio just to hear for themselves.

103. Q. Would LILCO's alleged lack of credibility affect pre-emergency education?

A. [Mileti] I see no reason to suspect that the alleged lack of credibility of LILCO would detract from the primary function that such a brochure could provide. That is, people -- regardless of what they think of LILCO -- would be exposed to the idea that an emergency plan exists, that an emergency information system would be available to give them information in an emergency, that sheltering and evacuation could be among the things they might do in an emergency, and that radiation risk in an emergency could be airborne.

104. Q. Will the public regularly get information from LILCO mailed to them?

A. [Clawson, Cordaro, Robinson, Weismantle] Yes. LILCO will make sure that educational materials are provided on an annual basis to the population in the EPZ by means of inserts in telephone books, direct mailings, and the emergency planning brochure.

105. Q. Do you think people are reading Shoreham-related public information?

A. [Clawson, Cordaro, Weismantle] Yes. During the six months that we included a postcard in "Keeping Current" for people to ask questions relating to Shoreham, we found a large number of respondents asking for additional information about material in the newsletter. This would indicate that people are reading Shoreham-related public information.

106. Q. What has LILCO done to ensure that the brochure will be believed?

A. [Clawson, Cordaro, Weismantle, Miletic] LILCO has had the brochure reviewed by sociological and health physics experts. In addition, LILCO has attempted to incorporate all viable comments from

Suffolk County, as revealed by the contentions in this proceeding.

107. Q. Will the people read the brochure?

A. [Clawson, Cordaro, Weismantle] Considering the amount of publicity that Shoreham has received, people will be likely to read the brochure from LILCO.

108. Q. Can the public contact LILCO if they have questions on the brochure?

A. [Cordaro, Clawson, Weismantle] Yes. the brochure contains an address to which people can write if they have questions.

109. Q. Would the answer to the above questions about the brochure differ if Suffolk County or New York State were participating in emergency planning?

A. [Cordaro, Weismantle] No. If either Suffolk County or New York State decided to take an active role in emergency preparedness, LILCO would make every effort to assist them. Any information disseminated would be coordinated and LILCO would certainly accept either the State or County in the lead role in developing an emergency planning brochure.

LILCO, March 30, 1984

CERTIFICATE OF SERVICE

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

I certify that copies of LILCO's TESTIMONY ON CONTENTION 11 (CONFLICT OF INTEREST) AND LILCO'S TESTIMONY ON CONTENTION 15 (CREDIBILITY) were served this date upon the following by first-class mail, postage prepaid, or (as indicated by one asterisk) by hand, or (as indicated by two asterisks) by Federal Express.

James A. Laurenson,
Chairman*
Atomic Safety and Licensing
Board
U.S. Nuclear Regulatory
Commission
East-West Tower, Rm. 402A
4350 East-West Hwy.
Bethesda, MD 20814

Dr. Jerry R. Kline*
Atomic Safety and Licensing
Board
U.S. Nuclear Regulatory
Commission
East-West Tower, Rm. 427
4350 East-West Hwy.
Bethesda, MD 20814

Mr. Frederick J. Shon*
Atomic Safety and Licensing
Board
U.S. Nuclear Regulatory
Commission
East-West Tower, Rm. 430
4350 East-West Hwy.
Bethesda, MD 20814

Eleanor L. Frucci, Esq.*
Attorney
Atomic Safety and Licensing
Board Panel
U. S. Nuclear Regulatory
Commission
East-West Tower, North Tower
4350 East-West Highway
Bethesda, MD 20814

Secretary of the Commission
U.S. Nuclear Regulatory
Commission
Washington, D.C. 20555

Atomic Safety and Licensing
Appeal Board Panel
U.S. Nuclear Regulatory
Commission
Washington, D.C. 20555

Atomic Safety and Licensing
Board Panel
U.S. Nuclear Regulatory
Commission
Washington, D.C. 20555

Bernard M. Bordenick, Esq.*
David A. Repka, Esq.
Edwin J. Reis, Esq.
U. S. Nuclear Regulatory
Commission
7735 Old Georgetown Road
(to mailroom)
Bethesda, MD 20814

Stewart M. Glass, Esq.**
Regional Counsel
Federal Emergency Management
Agency
26 Federal Plaza, Room 1349
New York, New York 10278

Stephen B. Latham, Esq.**
Twomey, Latham & Shea
33 West Second Street
Post Office Box 393
Riverhead, NY 11901

Fabian G. Palomino, Esq.**
Special Counsel to the
Governor
Executive Chamber
Room 229
State Capitol
Albany, New York 12224

Herbert H. Brown, Esq.*
Lawrence Coe Lanpher, Esq.
Christopher M. McMurray, Esq.
Kirkpatrick, Lockhart, Hill
Christopher & Phillips
8th Floor
1900 M Street, N.W.
Washington, D.C. 20036

Mr. Marc W. Goldsmith
Energy Research Group
4001 Totten Pond Road
Waltham, Massachusetts 02154

MHB Technical Associates
1723 Hamilton Avenue
Suite K
San Jose, California 95125

Mr. Jay Dunkleberger
New York State Energy Office
Agency Building 2
Empire State Plaza
Albany, New York 12223

Gerald C. Crotty, Esq.**
Counsel to the Governor
Executive Chamber
State Capitol
Albany, New York 12224

Ralph Shapiro, Esq.**
Cammer & Shapiro, P.C.
9 East 40th Street
New York, New York 10016

James B. Dougherty, Esq.**
3045 Porter Street
Washington, D.C. 20008

Jonathan D. Feinberg, Esq.
New York State Public Service
Commission, Staff Counsel
3 Rockefeller Plaza
Albany, New York 12223

Spence W. Perry, Esq.**
Associate General Counsel
Federal Emergency Management
Agency
500 C Street, S.W., Rm. 840
Washington, D.C. 20472

Ms. Nora Bredes
Executive Coordinator
Shoreham Opponents' Coalition
195 East Main Street
Smithtown, New York 11787

Martin Bradley Ashare, Esq.
Suffolk County Attorney
H. Lee Dennison Building
Veterans Memorial Highway
Hauppauge, New York 11788

Kathy E. B. McCleskey
Kathy E. B. McCleskey

Hunton & Williams
707 East Main Street
Post Office Box 1535
Richmond, Virginia 23212

DATED: March 30, 1984