

LILCO, July 27, 1984

UNITED STATES OF AMERICA  
NUCLEAR REGULATORY COMMISSION

DOCKETED  
USNRC

Before the Atomic Safety and Licensing Board

30 P3:04

In the Matter of	)	
	)	
LONG ISLAND LIGHTING COMPANY	)	Docket No. 50-322-OL-4
	)	(Low Power)
(Shoreham Nuclear Power Station,	)	
Unit 1)	)	

LILCO'S MOTION TO STRIKE TESTIMONY OF  
G. DENNIS ELEY, C. JOHN SMITH, GREGORY C. MINOR  
AND DALE G. BRIDENBAUGH ON BEHALF OF SUFFOLK COUNTY  
REGARDING EMD DIESEL GENERATORS AND 20 MW GAS TURBINE

Pursuant to 10 CFR § 2.743(c) the Long Island Lighting Company ("LILCO") moves to strike the "Testimony of G. Dennis Eley, C. John Smith, Gregory C. Minor and Dale G. Bridenbaugh on Behalf of Suffolk County Regarding EMD Diesel Generators and 20 MW Gas Turbine" (hereinafter "County Testimony"), on the ground that the witnesses lack the qualifications to testify about the operation and reliability the EMD diesel generators and the gas turbine and, in the specified instances, the testimony is irrelevant.

I. The Suffolk County Witnesses Are Not  
Qualified To Testify About The EMD Diesel Generators

A. General Lack of Expertise

LILCO moves to strike the testimony at page 7, line 3 through page 41, line 14 on the ground that Eley, Smith, Minor and Bridenbaugh are not qualified to testify about the operation,

testing, maintenance or reliability of the EMD diesel generators. Two of Suffolk County's witnesses, Minor and Bridenbaugh, have no experience in the design or operation of a diesel generator. During Minor's deposition he testified:

Q. [H]ave you ever been responsible for the operation of a diesel generator?

A. No, I have not.

Q. Have you ever designed a diesel generator?

A. No, I have not.

Deposition of Gregory C. Minor at 26. Similarly, Bridenbaugh testified that he had not had experience in the operation or design of a diesel generator.

Q. Mr. Bridenbaugh, do you have any experience in the operation of diesel generators?

A. [Bridenbaugh] I don't have any hands-on experience in the operation of diesel generators. I've never operated one myself that I can recall. I do have some experience in related areas, though, in that for a number of years when I was at General Electric, I was the manager of product service for the nuclear division, and in my responsibility fell the liason with utilities operating all of GE's completed nuclear plants at that time. And in the early years of the nuclear business, GE was furnishing plants on a turnkey basis both domestically and overseas and so it was part of my responsibility to be concerned about the operation of all equipment in the plant, including the diesel generators.<sup>1/</sup>

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<sup>1/</sup> Bridenbaugh, however, affirmed that processing diesel generator claims involved only the routing of those claims to the diesel generator's manufacturer. He could not even remember whether he had ever processed such a claim. (Deposition of Bridenbaugh and Hubbard, 90-92).

Q. Have you ever designed a diesel generator?

A. [Bridenbaugh] No, I have not.

Q. Have you ever had responsibility for maintaining a diesel generator?

A. [Bridenbaugh] In the general sense that I described in the service responsibility, I would say yes. But from a detailed supervisory standpoint, no.

Q. Have you ever assessed the reliability of a diesel generator?

A. [Bridenbaugh] No.

Deposition of Dale G. Bridenbaugh and Richard B. Hubbard at 34-35.

Minor's and Bridenbaugh's total lack of experience with diesel generators, let alone EMD Diesel Generators, renders them incompetent to testify about the reliability of the EMD diesel generators (County Testimony at 7), the need for fire protection or suppression systems (County Testimony at 7), the adequacy of LILCO's procedure for testing the EMDs (County Testimony at 8 and 20-25), the possibility of problems arising from the fact that the EMDs share a single electrical output circuit from the EMD control cubicle (County Testimony at 10-12), the possibility of problems arising from the common starter system for the EMDs (County Testimony at 12-15), the possibility of problems arising from the EMD fuel systems supply (County Testimony at 15-19), the fire detection equipment available for the EMDs and the possible effect of fire on the reliability of the EMDs (County Testimony at 20-25), the alarm monitoring system for the EMDs (County Testimony at 8

and 30-34), or the method by which EMDs are started and loaded (County Testimony at 34-38). Moreover, since the testimony, at page 7, line 3 through page 38, line 3 is offered by all of the witnesses. The County apparently believes it is impossible to segregate the opinions of Minor and Bridenbaugh from those of the other witnesses. Consequently, the incompetence of Minor and Hubbard to offer the testimony renders the entire testimony incompetent and unreliable, and the testimony should be stricken on that basis.<sup>2/</sup>

Suffolk County witnesses Eley and Smith are likewise not qualified to render the opinions contained in the testimony. Their professional qualifications as offered in the testimony and contained in their resumes demonstrate that the witnesses' experience with diesel generators is limited to the marine application of diesels and that the witnesses have had no experience with stationary diesels in particular, EMD diesels. Eley's deposition confirms that his experience has been limited to marine diesel generators:

Q. Have you had any experience in the operation of a diesel generator of any sort?

A. Yes.

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<sup>2/</sup> Of course, this is merely an alternative and largely superfluous basis for striking the testimony since Eley and Smith are similarly incompetent to render any opinions.

Q. Describe that for me, if you will.

A. I have been a sea-going engineer for quite a considerable period of time, during which time or part of which of the time was spent on diesel generators.

Q. Marine diesel generators?

A. Marine diesel generators.

Q. Do you have any experience in the operation of stationary diesel generators?

A. The only experience I have with stationary diesel generators was during my apprenticeship at George Clark and Northeastern Marine, an engine builder in U.K. It was very superficial in nature. I was a young apprentice at the time.

Q. Have you had any experience in the design or in the maintenance of stationary diesel generators?

. . . .

A. Most of our experience has been related to the marine field.

Q. The answer to my question is no, that you haven't had any --?

A. That's correct.

Deposition of George Dennis Eley at 9-10.

Q. I also take it from your previous answers that you have not had any responsibilities for installation of any emergency power sources at nuclear power plants, is that accurate?

A. My installation knowledge is all related to the marine field.

Deposition of George Dennis Eley at 18. The inexperience of Eley and Smith with stationary diesels renders them incompetent to



offer the detailed testimony about the EMD diesels found at pages 7-38.

Furthermore, Eley and Smith are not qualified to render opinions contained in the testimony at page 38, line 4 through page 41, line 14, which relate directly to the design, maintenance, operation, testing, and reliability of EMD diesels, because they have had no experience with EMD diesel generators. In that portion of the testimony, Eley and Smith reached conclusions about the reliability of the EMD diesel generators now located at Shoreham based on the information contained in maintenance records and repair histories of the EMD diesels. During Eley's deposition he corroborated the fact that he has had no experience with the design, operation, maintenance or testing of EMD diesels:

- Q. Have you had any previous experience, either by way of consulting or operating or maintenance experience, with GM EMD diesels?
- A. I have a list of the engines that I worked on in my prior deposition, and the TDI and the EMD generators was not on the list. No, I have not.
- Q. Were there any EMD diesel engines that weren't diesel generators with which you have had any experience?
- A. No.
- Q. Prior to your work for Suffolk County incident to the Shoreham licensing proceedings, have you ever reviewed the design of a GM EMD diesel?
- A. Not a GM, no.

Q. Do you have any knowledge of industry experience with GM EMD diesel generators?

A. I have asked various requests and telephone conversations with counsel to obtain this data, but as of yet I have not received any data of this nature, no.

Q. And I take it you don't have any such knowledge from your own work experience to date, is that right?

A. That's correct.

Q. Do you have any knowledge of or familiarity with the use of GM EMD diesel generators at any nuclear power plants in the United States, other than the Shoreham plant?

A. Other than the information that has been supplied to me so far by counsel, which you have a copy of, I have no further information on EMD generators other than that.

Deposition of George Dennis Eley at 18-19.

Similarly, Smith has no experience with EMD diesels or with the design of a diesel generator. Smith was not deposed because he was not identified as a potential witness until June 28. Nevertheless, Suffolk County's counsel provided certain information in a July 6, 1984 letter (Attachment A) in response to inquiries by LILCO. That letter included the following:

(5) Has Mr. Smith ever designed a diesel engine? Has he ever participated in the design of a diesel engine? If the answer to either of these is yes, please give the details.

Response

Mr. Smith has never designed a diesel engine from start to finish; however, he has participated in the design of modifications to diesel engines, such as changes to cooling and fuel systems.

(6) Detail Mr. Smith's experience and involvement with non-marine diesel engines. Similarly, please detail Mr. Smith's experience with EMD diesel engines and any application of them, distinguishing stationary from marine applications and nuclear applications from non-nuclear applications.

Response

Mr. Smith's experience and involvement with diesel engines has been with diesel engines in marine applications. Mr. Smith has not had previous experience with EMD diesel generators.

(7) Has Mr. Smith ever had direct responsibility for operating stationary diesel generators? Has Mr. Smith ever had any direct responsibility for operating EMD diesel generators? If the answers to either of these questions is in the affirmative, please provide all details.

Response

Mr. Smith has not had direct responsibility for operating diesel generators other than in connection with marine applications, or for operating EMD diesel generators.

(8) Has Mr. Smith ever participated in or been a member of any committee or organization which had responsibility for establishing any standards applicable to diesel engines? If so, please provide all details.

Response

Mr. Smith has not participated in the establishment of industry standards for diesel engines. He has, however, participated in the development and establishment of standards for diesel engines on individual ships.

(9) Has Mr. Smith ever worked in any nuclear facility or been responsible for designing, installing, operating or maintaining any equipment at a nuclear facility?

Response

No.



(10) Has Mr. Smith ever had any consulting experience with respect to GM EMD diesel engines? Has Mr. Smith ever had any consulting experience concerning any aspect of nuclear plants prior to Suffolk County's retention of him or his firm? If so, please provide details.

Response

No.

Finally, none of the witnesses profess any experience, background or education in the operation or maintenance of TDI diesel generators. Thus, they have no ability to compare EMD diesels to the TDIs, even if that were the proper comparison.

The inexperience of the County's witnesses with the design, operation, maintenance and testing of stationary diesel generators, in particular EMD diesel generators, renders their testimony incompetent and unreliable; LILCO therefore moves that the testimony be stricken.

B. Specific Lack of Expertise

In addition to their general lack of expertise concerning diesel generators and EMD diesel generators which renders their entire testimony incompetent, the witnesses are incompetent to express particular opinions as follows:

1. Page 5, line 15-page 6, line 5: These witnesses have no background in assessing the safety of a nuclear power plant or the safety of transmission systems or power generation sources. Thus, they cannot opine as to whether "alternate sources of emergency AC power would be as safe as

operation at up to five percent power relying on a qualified onsite emergency AC emergency power system." County Testimony at 5. Moreover, the testimony does not, in fact, compare LILCO's system with that which would have been required under GDC 17. Instead, the testimony compares the EMD diesels and the 20 MW gas turbine individually with the TDI diesel generators. This is not the proper comparison. Thus, the testimony cannot and does not address the safety of operation.

2. Page 7, lines 10-14; page 12, lines 11-13; page 13, lines 9-11; page 14, line 26-page 15, line 1; page 17, lines 15-18; page 20, lines 4-8; page 21, lines 10-11; page 23, lines 4-6; page 28, lines 2-3; page 29, lines 4-5; page 34, lines 2-4; page 40, line 19-page 41, line 4: In each of these instances, the witnesses purport to address the "reliability of the EMD diesel generators and compare it with the "reliability" of qualified onsite diesel generators. For the reasons discussed above, the witnesses have no competence to address the reliability of the EMDs or compare them with the TDIs. The witnesses simply have no familiarity with EMDs. At best, they can look at drawings or the EMDs themselves and describe particular characteristics or features. They have no knowledge of the operation, maintenance and industry reputation of these machines from which to assess their "reliability." Accordingly, all references to the "reliability" of the EMDs should be stricken.

3. Page 7, lines 4-9: For the reasons stated in the preceding two paragraphs, the witnesses similarly have no competence to express an opinion comparing the safety of the emergency power sources upon which LILCO relies for low power testing.

4. Page 6, lines 8-12; page 17, lines 5-8; page 19, lines 7-13: These witnesses have no expertise concerning seismic analysis. They cannot compare the seismic resistance of the EMD diesel generators or the 20 MW gas turbine with the TDIs. Accordingly, their comment about the seismic resistance of the TDI diesels ought to be stricken as both incompetent and irrelevant to their

testimony. Similarly, they cannot competently opine that the fuel hose to EMD 402 is "susceptible to failure due to both ground motion and missile impact."

5. Pages 21, line 11-page 23, line 3: These witnesses have no expertise in fire fighting techniques or pyrotechnics. Thus, they are incompetent to opine about the likely course of a fire or what fire fighters might do to control the fire.

6. Page 40, line 15-page 41, line 4: These witnesses are not competent to express an opinion concerning turbochargers on EMD diesels. The proffered testimony is based solely on a document procured from EMD.<sup>3/</sup> As discussed above, the witnesses obviously have no personal knowledge of the operation of the EMDs at Shoreham or the industry reputation of EMD diesel generators. Thus, not only do they not know first-hand about the alleged turbocharger problem, they cannot be cross-examined about the document from GM. In short, they will be incapable of responding to questions such as the conditions under which the alleged problems have arisen, the number of operating hours necessary to cause the problems and the like.

II. Testimony About Reliability and Safety As Proffered by Suffolk County Is Irrelevant

The testimony at page 7, lines 10-14; page 12, lines 11-13; page 13, lines 9-11; page 14, line 26-page 15, line 1; page 17, lines 15-18; page 20, lines 4-8; page 21, lines 10-11; page 23, lines 4-6; page 28, lines 2-3; page 29, lines 4-5; page 34, lines 2-4; page 40, line 19-page 41, line 4; page 7, lines 4-9 and at

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<sup>3/</sup> Though identified by the County, this document has never been produced to LILCO.

page 47, lines 4-15, purports to assess the safety and/or reliability of the EMD diesels and the 20 MW gas turbine in comparison with the TDI diesel generators. Yet no effort is made to assess the reliability or safety of the integrated AC power system proposed by LILCO. Instead, the testimony attempts to compare each power unit individually with the TDIs. This is not the proper comparison and does not bear upon the comparative safety of the plant's operation at 5% power with or without qualified diesel generators. Accordingly, this testimony is irrelevant and should be stricken.

III. Suffolk County's Witnesses Are Not Qualified  
To Testify About The 20 MW Gas Turbine

LILCO moves to strike the County's testimony at page 41, line 15 through page 47, line 15 on the grounds that Minor and Bridenbaugh have no experience in the design, operation, maintenance, or testing of gas turbines such as the 20 MW Pratt & Whitney gas turbine at the Shoreham site and, therefore, that the witnesses are incompetent to render opinions about the adequacy of the testing procedures or the reliability of the gas turbine.

The professional qualifications of Minor and Bridenbaugh as outlined in the testimony and in the attachments referenced by the testimony do not demonstrate that either witness has had experience in the design, operation, testing or maintenance of gas turbines. Moreover, their depositions confirm that neither



Bridenbaugh nor Minor is qualified to render opinion or factual testimony on the reliability of the 20 MW gas turbine employed at Shoreham or the effectiveness of the testing procedures to ensure the availability and reliability of the gas turbine. During his deposition Bridenbaugh testified that his experience with gas turbines was extremely limited and that he had not had any responsibility for the design or manufacture of a gas turbine or for the actual operation of a gas turbine in the generation of electric power:

Q. You stated that you have some experience with respect to gas turbines. Can you describe that experience for me, please?

A. [Bridenbaugh] Yes. In my previous employment with the General Electric Company I worked for some period of time in what is called the installation and service engineering department of GE, and my responsibilities in that assignment, which covered approximately a 10-year period, included technical direction of the installation and maintenance and startup of power generation equipment supplied by the company to utilities. And I had responsibility during that time for the installation of a gas pipeline pumper in Arizona of a combined cycle steam turbine/gas turbine plant in Arizona, and for the modifications of some other gas turbine pumping units that the company had previously supplied to a gas company.

Q. When did you last have any direct experience with gas turbine?

A. [Bridenbaugh] 1966.

Q. Have you had any experience with Pratt & Whitney gas turbines?

A. [Bridenbaugh] No, I have not, other than riding on a few of them I guess.



Q. What was your position at the time with General Electric when you worked concerning the installation of the gas turbines you have just described?

A. I was installation supervisor in the Los Angeles office of INSE, and I was responsible for a number of service engineers who were overseeing the installation and startup of this equipment.

Q. Have you ever had any responsibility for actually operating a gas turbine in the generation of electric power?

A. [Bridenbaugh] No, I have not.

Q. Have you ever had any responsibility for designing or manufacturing a gas turbine?

A. [Bridenbaugh] I have never had any responsibility in the design of gas turbines. . . .

Deposition of Dale G. Bridenbaugh and Richard B. Hubbard at 18-20.

Similarly, Minor testified in his deposition:

Q. Have you ever been responsible for the operation or design of a gas turbine?

A. No, I have not.

Deposition of Gregory C. Minor at 26.

The witnesses' admitted lack of experience with the operation and design of gas turbines and in particular with the operation and design of the Pratt & Whitney gas turbine in use at the Shoreham Nuclear Power Station renders them incompetent to testify on the reliability of the 20 MW gas turbine or about the testing program to ensure the availability and reliability of the gas turbine. LILCO moves to strike the testimony of Minor and

Bridenbaugh about the 20 MW gas turbine on the ground that they do not have the expertise to render opinion or factual testimony on the 20 MW gas turbine.<sup>4/</sup>

IV. The Witnesses Are Incompetent To Testify About  
The Complexity Of The Proposed Alternate AC Power System

LILCO moves to strike the testimony at page 47, line 16 through page 49 on the ground that Gregory C. Minor does not have the experience or technical expertise to testify about the electric connections associated with the alternate AC power system proposed by LILCO and the complexity of that alternate AC power system. Minor's professional qualifications as outlined in his testimony and the resume attached thereto and his deposition testimony demonstrate that he is not sufficiently experienced in the area of electric transmission to render the opinion that the configuration of the supplemental AC power sources is more complex and therefore less reliable than the original onsite power system. Minor testified at his deposition that he had no had direct experience in the design of an electrical transmission system, nor had he been responsible for the operation for any power generation equipment.

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<sup>4/</sup> Additionally, the last question and answer on page 45 of the testimony should be stricken because none of the witnesses are competent to express any opinion about seismic resistance of the 20 MW gas turbine.

Q. Have you ever designed or been responsible for designing electric transmission equipment for an electric system?

A. I have not had direct experience in design of electric transmission systems for a utility. I have had training in that area, and I have worked for a utility in a summer assignment in their hydrogenerator when I was in college. So I'm familiar with that area but I have not formally designed the equipment for a utility.

. . .

Q. You said you received some training in transmission systems. Can you detail that for me, please?

A. In my undergraduate work at the University of California, I took an electric power option, and studied the analysis and design of transmission system.

Q. Have you ever applied that knowledge in designing any transmission system or equipment?

A. I believe I answered that earlier and said no.

Q. Have you ever been responsible for operating any power generation equipment?

A. No.

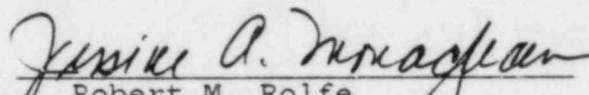
Deposition of Gregory C. Minor at 24-26. Minor's lack of experience with power transmission systems renders his testimony at pp. 47-49 incompetent. On that basis, LILCO moves that this portion of the testimony be stricken.

V. CONCLUSION

For the reasons stated above, LILCO respectfully requests that this Board strike the "Testimony of G. Dennis Eley, C. John Smith, Gregory C. Minor and Dale G. Bridenbaugh on Behalf of Suffolk County Regarding EMD Diesel Generators and 20MW Gas Turbine."5/

Respectfully submitted,

LONG ISLAND LIGHTING COMPANY

  
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Post Office Box 1535  
Richmond, Virginia 23212

DATED: July 27, 1984

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5/ This motion is submitted in advance of the witnesses appearance on the stand in the interest of efficiency and is based solely on the matters appearing in the prefiled testimony and the depositions of the witnesses. If the Board permits the witnesses to testify, LILCO may raise additional grounds for striking the testimony following voir dire and cross-examination of the witnesses.

Attachment

**KIRKPATRICK, LOCKHART, HILL, CHRISTOPHER & PHILLIPS**

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July 6, 1984

BY TELECOPIER

Robert M. Rolfe, Esq.  
Hunton & Williams  
707 East Main Street  
Richmond, Virginia 23212

Dear Bob:

This letter responds to your July 3, 1984 letter to Larry and Tip, in which you posed a number of questions concerning the opinions of C. John Smith. Pursuant to the Board's Oral Order of June 22, 1984, Suffolk County provides the following responses, which to the County's knowledge are correct at this time:

- (1) John Birkenheier's letter of June 29 indicates that Mr. Smith preliminarily is concerned that "the maintenance, testing and repair histories of the EMD diesels and the 20 MW gas turbine raise concerns about their reliability and that of their components." What are these concerns? What in the histories suggest these concerns?

Response

At this time, Mr. Smith's concerns with respect to the reliability of the EMD diesels are that the testing, repair and maintenance records indicate that components of the EMD diesels (e.g. cylinder heads, pistons, cylinder linings, turbochargers, starter motors) have failed and/or have had to be replaced



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with greater than expected frequency. He is also concerned about problems with the turbochargers that arise when the generators are run at low loads, and with the fact that repowering of the generators has been necessary after a low number of operating hours. The bases for Mr. Smith's concerns are the information identifying repowerings and component failures and replacements contained in the maintenance, testing and repair histories of the EMD diesels, "Refinement of the Electro-Motive Turbochargers," Electro-Motive Division, General Motors Corporation, La Grange, Illinois, August 1982, and other documents provided by LILCO.

Mr. Smith has not yet reviewed materials relating to the 20 MW gas turbine, although he may do so. The statement in my June 29 letter was inaccurate in referring to the gas turbine. If Mr. Smith reaches opinions or conclusions relating to the gas turbine, we will let you know.

- (2) John Birkenheier's letter further states Mr. Smith's preliminary opinion that "the EMDs also appear to be more vulnerable to fire and explosive hazards than the original onsite power source." What is the basis for this opinion?

Response

Mr. Smith's opinion concerning the vulnerability of the EMD diesels to fire and explosive hazards is based on the absence of fixed fire detection and suppression systems for the EMD diesels, the absence of flash guards on the day tanks, the common fuel system, and the inadequate isolation of the starter batteries from the rest of Unit 403.

Robert M. Rolfe, Esq.

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- (3) Another of Mr. Smith's preliminary opinions is that "neither the EMDs nor the gas turbine are proposed to be fully tested with the necessary or desirable frequency, and neither are sufficiently monitored for alarms or status." What testing would be proposed by Mr. Smith? You may recall that Mr. Bakshi was unable to answer this question during his deposition. Additionally, what further monitoring or alarms would Mr. Smith recommend and why are they necessary?

Response

Again, Mr. Smith's concerns at this time focus on the EMD diesels, not the gas turbine. At this time, Mr. Smith has not developed any testing procedures for LILCO's proposed EMD configuration. However, Mr. Smith does believe that LILCO's procedures are inadequate in that they test only whether the engines can be manually started and loaded. He believes that complete and adequate test procedures must realistically test all elements of a system, including automatic features. In Mr. Smith's opinion, because the alarms and monitors relating to the EMDs are almost all local, people in the control room are not aware of information that may be indicated at the EMDs. Thus, he believes that alarms and monitors for the EMD diesels should not be indicated only at the EMD units.

- (4) Why does Mr. Smith believe that "the manual steps involved in loading and operating the EMDs make them vulnerable to human error?" Has he undertaken any "human factors" investigation and does he have any expertise in this area?

Robert M. Rolfe, Esq.

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Response

Mr. Smith believes that because human operators must take steps to load and operate the EMD diesels, rather than those processes being automatic, there is a potential for those operators to take actions, or commit errors that could lead to failure of the EMD configuration. Mr. Smith has had experience in designing operating procedures for electrical and mechanical equipment aboard ships.

- (5) Has Mr. Smith ever designed a diesel engine? Has he ever participated in the design of a diesel engine? If the answer to either of these is yes, please give the details.

Response

Mr. Smith has never designed a diesel engine from start to finish; however, he has participated in the design of modifications to diesel engines, such as changes to cooling and fuel systems.

- (6) Detail Mr. Smith's experience and involvement with non-marine diesel engines. Similarly, please detail Mr. Smith's experience with EMD diesel engines and any application of them, distinguishing stationary from marine applications and nuclear applications from non-nuclear applications.

Response

Mr. Smith's experience and involvement with diesel engines has been with diesel engines in marine applications. Mr. Smith has not had previous experience with EMD diesel generators.

Robert M. Rolfe, Esq.

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- (7) Has Mr. Smith ever had direct responsibility for operating stationary diesel generators? Has Mr. Smith ever had any direct responsibility for operating EMD diesel generators? If the answers to either of these questions is in the affirmative, please provide all details.

Response

Mr. Smith has not had direct responsibility for operating diesel generators other than in connection with marine applications, or for operating EMD diesel generators.

- (8) Has Mr. Smith ever participated in or been a member of any committee or organization which had responsibility for establishing any standards applicable to diesel engines? If so, please provide all details.

Response

Mr. Smith has not participated in the establishment of industry standards for diesel engines. He has, however, participated in the development and establishment of standards for diesel engines on individual ships.

- (9) Has Mr. Smith ever worked in any nuclear facility or been responsible for designing, installing, operating or maintaining any equipment at a nuclear facility?

Response

No.

- (10) Has Mr. Smith ever had any consulting experience with respect to GM EMD diesel engines? Has Mr. Smith ever had any consulting experience concerning any aspect of nuclear plants prior to Suffolk County's retention of him or his firm? If so, please provide details.

Response

No.

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Robert M. Rolfe, Esq.

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- (11) Does Mr. Smith have any opinion as to the industry reputation or experience with respect to GM EMD diesel engines in general and in nuclear applications? If so, please provide details.

Response

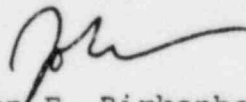
Mr. Smith has had experience with GM diesel engines, and he believes that their reputation in the industry is generally favorable. He does not know the reputation of EMD diesel engines in particular.

- (12) Exactly what investigation is Mr. Smith undertaking with respect to the EMDs at Shoreham?

Response

At this time, Mr. Smith is reviewing the data concerning the EMD diesels contained in documents obtained from LILCO through discovery, as well as a document titled "Refinement of the Electro-Motive Turbocharger," Electro-Motive Division, General Motors Corporation, La Grange, Illinois, August 1982. He is also meeting with Messrs. Eley, Bakshi and Minor and discussing with them their observations concerning the EMDs.

Sincerely,



John E. Birkenheier

cc: Fabian Palomino, Esq.  
Edwin J. Reis, Esq.